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President's Address*

Members of the Oklahoma State Medical Association, distinguished guests, ladies and gentlemen: Our retiring President, Dr. W. A. Howard, has served us most efficiently, and if I can but emulate him, I shall feel that my purpose has been accomplished.

The health of the people of America is being used as a political pawn. You are perhaps aware that a vicious propaganda against the medical profession is being waged by politicians, wilfully and receptively misinformed writers, a few disgruntled physicians, and others, based upon false assumptions, incompetent and equally false surveys, half truths and upon no truth at all. You have read various newspaper articles and magazine stories, have heard radio talks and dramatizations, depicting how deplorable health conditions are in America, but failing to inform you that our people are the healthiest in the world.

All of these are incidents in a program of propaganda at discrediting American medicine and a build-up for political medicine based upon proletarian concepts. A National Health Bill was introduced in the Senate about a year ago by Senator Robert F. Wagner of New York, who is also the author of the Wagner Labor Relations Act. This health bill of the Senator's is supposed to "provide for the general welfare by enabling the several states to make more adequate provision for public health, prevention and control of disease, maternal and child health services, construction and maintenance of needed hospitals and health centers, care of the sick, disability insurance, and training of personnel; to amend the Social Security Act; and for other purposes." This act, which would authorize appropriations for certain purposes, amends certain sections and adds new sections to the Social Security Act. Without any specific declaration of the fact, it obviously offers legislation to implement the federal portion of the National Health Program.

Welfare of the public is the first requisite for a plan to improve the health of the American people. Under the present medical system, preventive medicine has reached a standard unrivaled by any country in the world. During a period of 150 years, life expectancy of an American has been expanded from 35 years to 62 years — a true test of medical service. We have no serious epidemics. Typhoid fever is easily controlled; smallpox is no longer terrifying; diphtheria is no longer a scourge. Death from tuberculosis in all forms has been reduced from 103.84 to 43.17. Shall we pay more taxes in order to retard this progress? This has been the experience of European countries having political medicine.

According to the sponsors of the plan, by the time the National Health Program has been in operation for ten years, total expenditures will amount to as much as $850,000,000 annually, which means overburdening taxes. In England over one-half of the amount of money collected by taxation for this program goes to pay for administration expense, and in Germany the number of non-medical workers is far greater than the number of physicians doing the medical work.

Two factors have delayed the enactment of the National Health Program. One is sufficient opposition, and the other is the great demand for funds. Its initiation last year would have interfered with the national defense appropriations and the more popular programs, such as Farm Security, WPA, etc. However, the President has proposed a large sum to be set aside for the building of hospitals, but here again unbiased surveys have disclosed the fact that the need is not for more hospitals except in some few instances, but better support for the existing hospitals. Statistics prove conclusively

*Delivered before the General Assembly, Oklahoma State Medical Association, May 7, 1940.

that we have, on the average, approximately 200,000 unoccupied hospital beds in this country, or about 32 per cent of the total. It is the plan of the National Health Program to construct new hospitals with a capacity of 180,000 beds; this is in addition to 27 special bills now before Congress proposing the construction of more veterans' hospitals. The administration admits that this bill is the opening wedge of a program of National Health.

You have often heard that the rich and the poor are the only ones who can obtain proper medical care and that the people of the great middle class are the ones who suffer. With this thought in mind and also the thought of filling many vacant hospital beds, the Oklahoma State Medical Association began a survey of the various successful plans of hospital service now in operation in the United States. After almost a year of intensive study, they developed a plan which they thought workable in Oklahoma. An organization was formed which is known as Group Hospital Service, a mutual corporation, sponsored by the Oklahoma State Medical Association and the Oklahoma State Hospital Association. The board of directors consists of seven representatives of the State Medical Association, seven from the State Hospital Association, and seven public-spirited laymen. It is strictly a non-profit mutual organization, no one receiving any remuneration for his services, with exception of the full-time director, associate director, and office employees and solicitors. Employed personnel are on salary basis, no commissions being paid, as is usually the method, inasmuch as it was thought this would tend toward misrepresentation in placing this service. The contract offers hospital care for the entire family at a total cost of $1.50 per month. This plan has been received by employer and employee alike beyond our expectancy. At the present time, invitations to interview various groups are so great that the staff cannot fill them. We believe this organization will do much toward solving the problem of hospital care for the wage earners of Oklahoma.

Oklahoma City and Tulsa have a "Medical Service Bureau," sponsored and financed by the respective county medical societies, and organized for the purpose of attempting to give the citizens of the communities adequate medical care at a fee commensurate with their ability to pay. Frequently in the case of indigents arrangements are made to take care of them without any charge whatsoever.

Tulsa also has a County Clinic which was developed by the County Medical Society in cooperation with the county commissioners. The salaries of the office staff, medical director, and case investigators are supplied by the County. The Medical Society supervises the purchase of drugs and equipment, and members of the Society are designated a specific time for diagnostic work and treatment. This type of well-organized medical care will, in all probability, lessen the cost of such care to the tax payers of Tulsa County by some 40 per cent, and assures adequate care of the indigent.

A similar clinic is also in operation in Muskogee County, with the exception that the Public Health Department provides the personnel. The physician on salary does not practice private medicine and cares only for the families sent to his office by members of the local County Society. The entire plan is under the direction of the County Medical Society, and all members of that body are subject to calls as consultants or assistants in surgical cases, etc. In this instance, service is provided without expense either to the recipient or to the county; the expense, as stated, being borne by the State Public Health Department.

In Woods County the Medical Society has worked out a plan in cooperation with both the county commissioners and the board of education on inoculation for quarantinable diseases. Routine examination of school children is provided and services rendered wherever needed.

Another plan is that known as the Farm Security Plan, which operates under the Farm Security Administration and at the present time is in operation in at least fifteen counties of the State. This plan gives, in cooperation with the county medical society, complete medical care to all families having a Government loan on sub-marginal land. An additional loan is made ranging from $19.00 for a family of two to $26.00 for a family of six or more. Complete medical care and hospitalization are afforded these families. This plan, like most political plans of medicine, is a poor one for the doctor. If there is anything left after administration and other costs are deducted, the doctor and hospital get it.

There are full-time venereal disease clinics in twenty-nine counties, and part-time clinics in nine counties. These clinics are operated at the expense of the Public Health Department insofar as drugs and equipment are concerned. The patients in these clinics, however, are attended by members of the State Medical Association, with remuneration of approximately $5.00 per day for their time. Patients are only accepted upon recommendation of a member of the county medical society, and each member of the society is in charge of the clinic for a designated time.

HENRY H. TURNER, President
Oklahoma State Medical Association
1940-1941

The Oklahoma Tuberculosis Society maintains clinics for the diagnosis of tuberculosis, and the physicians who devote their time to these clinics do so without pay.

The Crippled Children Society is statewide in its membership and holds a great number of clinics throughout the state each year, examining on an average of 1,000 children per annum. These children are diagnosed, and if operative procedures are necessary, they are referred to various hospitals in the State which have been approved for their care and treatment, and to date, 15,000 chlidren have been examined, and approximately 13,000 have been referred to hospitals for correction of various types of orthopedic and other surgical conditions, over a period of ten years. Hospitalization of these patients is partially paid for by a special tax levied by individual counties and by state appropriations, but the services of the physicians are without remuneration.

From a recent survey which has just been completed by the American Medical Association and which is very complete in every detail, it is estimated that American physicians donate over $1,000,000 per day in free services to the people of the United States. If this is broken down according to population, it will be found that Oklahoma's population is about 3 per cent of the United States', and it means that the medical profession of Oklahoma is giving approximately $30,000 per day in free services to the people of this State.

In Oklahoma City are the Medical School of the State University and its two teaching hospitals. Although these units are supported by the State, the appropriations made by the State for the support of the medical school and its teaching hospitals are not as great or even comparable to the return the State receives in the way of free medical service from the medical profession connected with these three institutions. Official records show that during the fiscal year ending June 30, 1937, 55,734 examinations were made in the out-patient departments of the two hospitals by members of the visiting staff. At a very conservative charge of $2.00 for each examination, this would amount to $111,468 for this volunteer, free professional service rendered to the State by the practicing physicians of Oklahoma City. During the fiscal year of 1935-36, there was a daily average of 431 patients in the University and Crippled Children's Hospitals who received an average of two visits or examinations per diem. This means 862 visits and examinations were made every day of the year to patients hospitalized in these two institutions, or 314,630 examinations and visits for the year, which if multiplied by the moderate charge of $2.00 would amount to $629,260. This added to the work performed in the out-patient department gives a total of $740,728 for the year. During the fiscal year ending June, 1937, 4,288 major and minor operations were performed in these two hospitals, including 1,700 orthopedic operations. The cost of these operations in private practice would vary from $10.00 to $500.00 per operation, according to the nature of the operation and ability of the patient to pay. If computed at even a moderate charge of $25.00, these may be conservatively estimated at a total of $107,200 annually. If these figures be added to the previous total of $740,728, we get a grand total of $847,928 as the lowest estimate that could possibly be given as the value in money of the free professional service which the state receives from the staff of these institutions. If these figures are compared with those found in the American Medical Association survey, as stated previously, at $30,000 per day, or $1,095,000 per year, it will be seen that they are quite in line. The average income of a physician in the United States has been estimated at $850.00 per year, while less than 100 physicians of Oklahoma City are donating over $800,000 in free services each year to the people of the State in these two institutions. What is true here is happening in every other city of this state, only in a smaller ratio.

I venture to say that no other group donates an amount in any way comparable to this. We are glad to do it and maintain our present status rather than become Government agents and forfeit our independence by which progress is made possible.

The medical profession of Oklahoma is constantly endeavoring to keep itself informed of the newer developments and methods of medicine by post-graduate courses which are sponsored and administered by the State Medical Association. The quality of medical service a physician renders to his community depends, to a great extent, on his knowledge of the newer and accepted methods of diagnosis, treatment, and prevention of disease. This knowledge can only be obtained by his more or less constantly familiarizing himself with current medical literature and post-graduate study. Because of financial or other circumstances related to their practice, few are able to leave it to take advantage of instruction offered in the larger centers of learning. The smaller the community and the greater its distance from teaching centers, the more isolated the physician becomes and the more urgent the need that post-graduate instruction be made available to him. Appreciating that this condition existed in rural Oklahoma to some extent, it was decided that this type of instruction should be taken directly into his own community.

The first post-graduate program was begun in 1925, under the direction of the Extension Division of the University of Oklahoma. During the following four years various courses were given in internal medicine, obstetrics, surgery, tuberculosis, urology, otolaryngology, etc. In 1929, the post-graduate program exceeded the budget set up for it by the University, and the State Medical Association then began rendering financial assistance and took a more active part in the administration of the program. Up until 1933, the physicians of Oklahoma had contributed $91,325 in fees to these programs.

In 1937, the Post-Graduate Committee of the Oklahoma State Medical Association decided to conduct a two-year program in obstetrics. An appropriation of $4,000 was requested from and granted by the State Medical Association for this work. This was supplemented by a generous contribution from the Commonwealth Fund of New York, as well as financial assistance from the Oklahoma State Health Department. The total budget was estimated at $19,500, per annum to provide for salaries for a full-time instructor, field director, and office secretary, in addition to miscellaneous expenses for supplies and equipment. During this two-year program the 77 counties of Oklahoma were covered, with a total of 805 enrollments, and an average attendance of 84 per cent. There were 1,293 private consultations made by the instructor with physicians enrolled in the course. In 178 communities 222 lay lectures were given, with a total attendance of 57,337. The course in obstetrics was concluded January 31, 1940, and a similar two-year program in post-graduate teaching of pediatrics was begun.

While the two-year programs sponsored by the State Medical Association are the most extensive, other graduate teaching is available.

Each fall the Oklahoma City Clinical Society conducts a four-day series of lectures and clinics with a faculty of sixteen teachers nationally known in their respective fields. At the last conference over 600 physicians enrolled. While the majority of these were from Oklahoma, six other states were represented. This costs the Oklahoma City doctors $1,200 to $1,500 per year.

Additional opportunity for study is offered through district medical societies, such as the Southeastern Medical Society, the Southern Counties Medical Society, and such local organizations as the Muskogee Academy of Medicine and the Tulsa Clinical Society, all of which sponsor one or two days of post-graduate work during the year.

The recently completed Cancer Program of the Oklahoma State Medical Association was in cooperation with the Women's Field Army of the American Society for the Control of Cancer and the Oklahoma Public Health Department. The course, which began February 5, was given in forty-three cities of the State. The instructor addressed in excess of 20,000 lay people on the necessity for the early diagnosis and treatment of cancer. The program was also available to every phycian of the Medical Association, and an attendance of 91 per cent of the membership of the county societies was attained in the counties where a center was established. Over 20,000 pieces of literature were distributed, and addresses were given before 22 schools, aggregating approximately 8,000 students.

Results of these programs and lay lectures have been to increase the practical and ethical standards of the profession, produce a greater unity among the members and closer cooperation and understanding between the profession and the laity.

I believe it will be evident to you, from what I have presented, that the medical profession of this State is not only doing an excellent job of providing medical care for the people, but also the physicians are quite wide awake in keeping themselves well informed of all the new methods of medicine through various medical societies and post-graduate programs. Our achievements are based upon ambition and inspiration, and not on the self-satisfaction of being gainfully employed.

Perhaps devotion to scientfic improvement and technical effectiveness is responsible for failure to keep the public fully aware of the achievements and standards of American medicine. The future of medicine will be determined by the intelligence and vigor with which we combat this widesperad propaganda. We have been called poor business men and impractical idealists, an accusation with a great deal of justification. It is more important now than ever before that physicians participate in public activities and cooperate in the promotion of projects which seem to have community value. We must function as citizens in order to expect consideration from the law makers. We must have more than a superficial knowledge of the machinery of government. It is imperative that we demand from all legislators — senators and congressmen — our local representatives — their views on health legislation. If we are to survive, we must alter the viewpoint of the patient by familiarizing the public with the facts or truths. Let each and every one of us assume the responsibility of preserving the independence of American medicine.

Henry N Turner

Renal Tumors of the Wilm's Type*

HENRY S. BROWNE, M.D.

TULSA, OKLAHOMA

The term "Wilm's tumor" is perhaps the happiest solution for a name to designate the embryonal growth that is essentially a disease of childhood, since it does not specifically name a type and there is still much argument as to the exact nature of this tumor. It is primarily an embryonal mixed growth in which one type of cell may predominate, this cell differing in other tumors.

As to the cause, various theories have been advanced—that of Wilm's being the most plausible. He believes that they arise from the renal nephrotome which is in close association with the mesenchyme, myotome and schlerotome, and, therefore, contain cells from these neighboring structures.

The embryonal tumor of the kidney is the most common type of tumor found in children, with the possible exception of tumor of the eye. Fortunately, it is a relatively rare disease and only five per cent of all renal tumors are of this type, and renal tumors are themselves uncommon. It is a disease of infants and young children, eighty per cent occurring before the seventh year and the great majority before the age of two. Both sexes are equally liable and both kidneys are equally affected. The tumor may arise from any portion of the kidney. It is encapsulated and rapidly grows to a large size. Such a rapid growth usually makes it cystic and it may be mistaken for a cystic kidney. The microscopic appearance depends on the type of embryonal cells present. Usually the picture is that of arrested renal elements with isolated tubules and atypical glomeruli surrounded by embryonal spindle cells. The tubules are lined by cylindrical or tubular cells with indistinct lumens. Muscle cells are usually present and other types of tissue, such as cartilage and bone, have been found. In spite of its rapid growth metastases occur late. They are most commonly found in the retroperitoneal glands and lungs.

The outstanding and important symptom of the Wilm's tumor is the presence of a mass in one side of the upper abdomen. This is usually discovered by the mother. Hematuria is not common, occurring in only about ten per cent of cases. Pressure symptoms, such as abdominal pain and vomiting, come late. As the growth advances, pallor, loss of weight and weakness appear.

Embryonal mixed tumors of the kidney are the most malignant of all renal neoplasms. Death usually occurs in from six to nine months after the onset. Metastases do not occur until near the end. A combination of deep x-ray therapy and nephrectomy offer the best chance of recovery. Even so, ninety per cent die.

The treatment that offers the most hope is preliminary deep x-ray therapy followed by nephrectomy. The tumors are very radiosensitive, so that the mass becomes much smaller or disappears. This makes nephrectomy much easier to perform. After surgery, more deep therapy should be given. It is only in the past few years with the great improvement in deep therapy equipment that we are beginning to be more encouraged in getting better results. However, even before the addition of x-ray therapy, surgery alone offered hope of cure.

Prather and Crabtree[1] in 1931 reported four cases: two operative—one of which was living and well fourteen months, and the other nine months, after nephrectomy. Bothe[2] well sums up our conclusions regarding the treatment of Wilm's tumor as follows:

1. The embryonal sarcomatous cells of mixed tumors of the kidney are radiosensitive.
2. The epithelial cells in mixed tumors of the kidney are radioresistant.
3. When mixed tumors of the kidney are irradiated before surgical removal the tumor is usually reduced in size.
4. The reduction in size of the tumor following irradiation appears to be dependent upon the amount of embryonal sarcomatous tissue.
5. Irradiation of the tumor does not completely destroy all of the malignant cells.

*Read before the Section on Urology and Syphilology, Annual Meeting Oklahoma State Medical Association, May 7, 1940.

6. Mixed tumors of the kidney should always have sufficient preoperative irradiation.

7. Mixed tumors of the kidney should always be removed after the irradiation. Surgical procrastination results in subsequent growth of metastases.

Priestley and Broders[3] state that preoperative irradiation followed in three to six weeks by nephrectomy and by extensive postoperative irradiation constituted the method of choice in treating these patients. Kretchmer[4] reports seven cases, in which there were five deaths later and two cases that were living after two and one-half years and three years and four months, respectively, both of these patients having had x-ray therapy and nephrectomy. He believes, therefore, in the combined treatment. McNeill, Jr. and Chilko[5] report one case from the literature and one of their own as living more than three years with deep x-ray alone and state that "while it is impossible to generalize from such a scarcity of material, in view of the appalling results obtained from other forms of treatment certainly this method is worth investigating further in the hope that we may yet stem the overwhelming tide of mortality of this dread condition."

Personally, in view of the often amazing retrogression of the tumor following irradiation, I believe that they should always be irradiated first and followed at the optimum time by nephrectomy, believing that it is far better to have the kidney out at this time of least activity of the tumor cells than to do a nephrectomy first and irridiate afterward, or as McNeill and Chilko[5] suggest, rely on radiation alone.

The following case will illustrate this point.

R. M. A.: white, female, aged 4 years 6 months, was first seen on September 12, 1939. Two days before she had been taken violently ill with fever, nausea, vomiting and pain in the left upper abdomen. On examination she appeared to be acutely ill, though well developed and nourished. There was a large smooth rounded mass occupying almost the entire left side of the abdomen. This was freely movable, rather firm and not painful. A catheterized specimen of urine was negative for pus and blood. Intravenous urography showed a normal right pyelogram with good function of the kidney. There was no excretion from the left side. The entire left side of the abdomen was filled by an opaque mass, the intestines being pushed to the right side of the abdominal cavity. She was cystoscoped under gas anesthesia and a catheter inserted to the left kidney. A retrograde pyelogram was made which showed a normal upper calyx but a filling defect of the lower two-thirds of the pelvis. The ureter was pushed across the midline to the right side of the vertebral column. A diagnosis of Wilm's tumor was made. This had grown to its present size in two months as two months previously she was examined by Dr. D. L. Garrett and no evidence of tumor was found.

She was given a series of eight deep x-ray treatments at daily intervals by Dr. Leon Stuart at St. John's Hospital and after the fourth treatment the tumor had shrunk visibly, and after a week it could not be palpated. A total of 1400R was given. She was taken to the Mayo Clinic where the diagnosis was confirmed and then returned here for operation. This was done on October 2, 1939 by Dr. Garrett and myself. Nephrectomy, with the fatty capsule adherent and undisturbed, was carried out easily. The shrunken kidney was almost as loose in its fossa as a pea in its pod. The pathological report by Dr. I. A. Nelson was as follows:

PATHOLOGY REPORT

RMA

Specimen: left kidney.

GROSS EXAMINATION (formalin fixed).

Kidney about 12x7x4 cm. with about three-fourths of the external appearance composed of a cystic tumor with surfaces somewhat yellowish with some hemorrhagic and greyish mottling. The capsule of the kidney proper is continuous over the cyst. Cross section shows a kidney structure with cortex and medulla somewhat indistinct and compressed by this cyst. The cyst contents are of a clear gelatinous nature but a portion of the cavity is composed of a very soft apparently degenerated yellowish tissue.

MICROSCOPIC EXAMINATION:

Microscopic examination shows some cloudy swelling in the parenchyma; fairly normal pelvic mucosa and some sections from amorphorous material retaining some well formed blood vessels; some loose round cell and plasma cell infiltration, but no evidence of malignancy.

DIAGNOSIS: Moderate parenchymatous nephritis. Degenerative tissue with no malignancy demonstrable.

Recovery was uneventful. A series of nine postoperative x-ray treatments were given, a total of 900 R, and on April 15, 1940 the patient was examined and found to be in excellent health with no evidence of recurrence.

In this case the clinical and urological findings were of a typical Wilm's tumor. It responded so amazingly to deep x-ray therapy that the pathologist was unable to find any active tumor cells in the removed specimen. A nephrectomy which would have been extremely difficult was rendered simple by deep therapy without the danger of rupturing the capsule and spreading the tumor.

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2. Bothe; J. Urol: 33-434: 1935.
3. Priestley and Broders; J. Urol: 33-534:1935.
4. Kretchmer; J. Urol: 39:250:1938.
5. McNeill, Jr. and Chilko; J. Urol: 39-287:1938.

The Use of Vitallium Screws in Fractures of the Long Bones*

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TULSA, OKLAHOMA

Internal fixation of fractures in the long bones by the use of many and various forms of screws, plates, nails and bands has been used for many years with varying success. Many of you here at this meeting have at one time or another applied a Lane or Sherman plate to a bone and have noticed many times in the subsequent x-rays a dark area appearing around the screws. This dark area is bone absorption around the screws, or, in other words, the screws were loose. Thus, when the screws got loose our plate got loose which resulted in inefficient immobilization of the fracture. This, no doubt, has accounted for failure of union of the fracture following plating in a large number of our cases.

It was because of the extreme variable bone changes, and variable clinical end results of various metals that were recommended for the use in bone surgery, that inspired Drs. Venable, Stuck and Beach to undertake their experimental work of the various metals and their reaction in bone. They thought that there must be some variable factor as yet undetermined that might account for these variable clinical end results. Quoting from their original article: "Doisy in 1894 experimented with the then new metal, aluminum, and noted that it produced irritation in bone like any other foreign body. LeFort in 1918 noted that the body tissues reacted differently to bullets of varying metals. Hey Grove in 1913 thought that nickel plated steel produced no irritation in the tissues but did find that magnesium produced destruction of bone. McBride at the Southern Medical in 1937 reported his experience with a screw made of 95.7 per cent magnesium alloy metal in fracture work. Zierold in 1924 reported his experiments on dogs in which he had placed in drill holes in various bones the following metals: gold, silver, aluminum, zinc, lead, copper, nickel, steel and stellite. All of these metals showed various tissue reaction and tissue discoloration. However, he did notice that gold, aluminum and stellite were much better tolerated than the others. Silver is well tolerated in tissues and bones but its use is limited on account of its softness and weakness of the pure metal."

From our own personal experience and the experience of many other physicians, I believe we should be deeply indebted to Drs. Venable and Stuck for their thorough experimental work. The metal called vitallium is an alloy of cobalt, chromium and molybdenum. It contains no iron and shows complete resistance to body fluids and no changes were observed whatsoever in the surrounding tissues or in the bone. These authors emphasize that in some of their experiments when chromium plated screws were placed in the bone they were able later to show chromium deposits in the liver and kidneys of their dogs. Thus it would seem unwise to use any type of chromium plate or screws. I believe at present none of these are on the market but until recently they were.

There is one case on record in Tulsa where a chromium plated Smith-Petersen nail was used for a fractured hip. A few weeks later the patient began to go down hill, and only when the nail was removed did the patient recover from what later was thought to be chromium poisoning. We have already heard a lot about the electrolysis of various metals,

*Read before the Section on General Surgery, Annual Meeting, Oklahoma City, Oklahoma, May, 1939.

and by this is meant that when different metals are placed in bone, such as a vanadium plate and vitallium screws to hold the fracture, and electrical force is generated; or, in other words, a battery is formed. Just

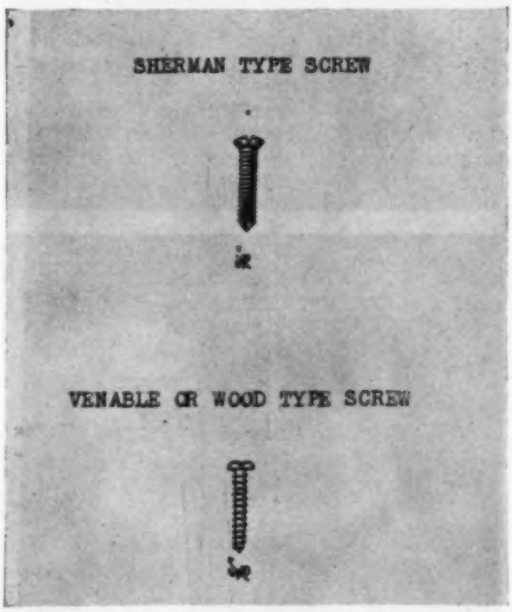

Fig. 1.

what this will prove, I am at present unable to say, because I have some well-united fractures that have been held by dissimilar metals. One thing I do know is, that I have always found bone reaction and tissue discoloration whenever I have removed an inert steel plate or pin. We have removed stainless steel nails and Smith-Petersen nails from bone and in *many* instances have found them very loose and almost ready to fall out. We have yet to see bone necrosis around the vitallium screws in our series of cases.

However, I might add that we use the vitallium screw that has the wide thread or what some people call the wood type of screw, in contrast to the Sherman vitallium screw. Fig. No. 1. The Sherman vitallium screw is similar to the old Sherman screw, in that it is the same caliber all the way down but is made of vitallium. I have been told recently that in Kansas City Dr. Frank Dickson has found that some of the Sherman type vitallium screws have become loose, where he has not found any loosening of the vitallium wood screws. Recently, we had the occasion to remove, because of an osteomyelitis, a massive onlay bone graft that had been held by vitallium screws, Fig. No. 2, and it was very interesting to study and observe that there was no discoloration of the bone graft where the screws entered, and that the screws could not be turned except with the screw driver. Gentlemen, the vitallium screws were as tight in the bone graft after eight months in the presence of infection as they were when they were put in at the time of operation. Now it has been my experience that in a similar instance other metal screws would have sloughed out long before this, just as would a piece of sequestrum.

Case I. Mr. A. C., 40 years old, fell from a horse and sustained a fracture of both bones of the left forearm on December 19, 1937. He was treated by skin traction and elevation for a period of twenty-one days. Then because the fracture had not reduced itself by this method, an open reduction was done on January 10, 1938 and a four-hole vanadium Sherman plate was put on the radius and held by four vitallium screws. The ulna was not touched. The usual customary care was used and he obtained a useful arm and solid bony union in both bones. X-ray made on January 11, 1939, shows the union with no bone absorption about the screws whatsoever.

Case II. J. D., 30 years old, sustained a fracture of both the right tibia and fibula in the middle third when a wagon bed fell on

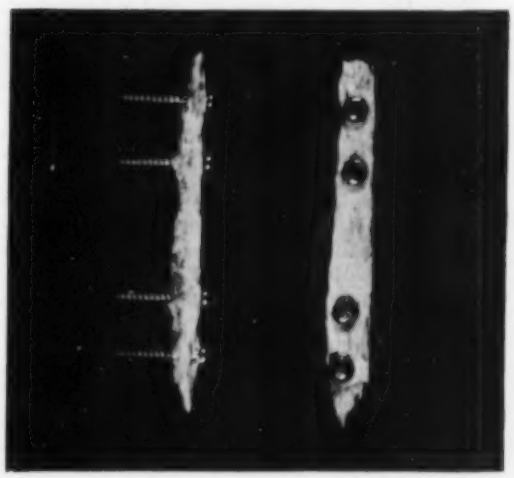

Fig. 2.—Bone graft held by vitallium screws. Graft removed because of infection. Screws in graft "could not" be turned by hand. No boney absorption about them.

him. The fracture was reduced and the leg was put in a plaster cast. At the end of six weeks there was no evidence of callus. Then I was asked to see the case and examination revealed that preturnatural mobility

was present at the fracture site. The x-ray revealed the fractures were overriding and showed no evidence of union. On April 21, 1938 the fracture site was exposed and a fibrous union was found. After freshening the end of the tibia, a four-hole Sherman vanadium plate was applied and this was held by four vitallium screws. While putting in these screws I had my first and only accident using vitallium screws. The head of a screw twisted off. X-ray made on July 31, 1938 revealed the progress of the union. The cast was removed and a walking caliper brace was applied at this time. We lost track of the case at this stage, so I do not know just how long he wore the brace. However, an x-ray taken on April 2, 1939, reveals the screws holding well and the fractures completely healed.

Case III. Mr. A. L., age 56, sustained a fracture of both bones of the left forearm in an auto accident on April 19, 1938. Closed reduction improved the fracture in the radius but the position later slipped and on April 30, 1938, an open reduction was done and a four-hole Sherman plate was put on the radius and held by four vitallium screws. The ulna was not touched. The usual plaster cast was applied, and a leather corset was later worn. Recent x-ray on March 28, 1939 reveals solid bony union of the fractures held by the plate with no bone absorption whatsoever about the screws.

Case IV. C. H., age 16, fell while playing basketball and sustained a compound fracture of both bones of the right forearm on April 21, 1938. Closed reduction was unsuccessful and on April 28, 1938, an open reduction was done, the ulna was fixed with two vitallium screws and a four-hole Sherman plate was put on the radius and held by vitallium screws. The usual plaster of paris casts were applied. The patient played football in the fall of 1938 and had no trouble whatsoever. He has normal range of motion. X-ray film made on February 10, 1939 revealed massive bone at the old fracture site with no absorption about the screws. I should like to call attention here, that we do *not* advocate open reduction or the use of foreign material in compound fractures. Sometimes one may get away with such a procedure and in this case we did.

Case V. K. D., age 18, sustained a long, spiral fracture of the femur on October 15, 1938. Fig. No. 3. Skeletal traction was used, but the position obtained was not satisfactory, so that on October 19, 1938, an open reduction was done and it was necessary to put on two Parham-Martin bands about the fracture site and at the same time two long vitallium screws were used. The usual plaster of paris spica was applied. On December 9, 1939 the cast was removed and he was advised to walk with a walking caliper brace. Union was progressing satisfactorily. X-ray on April 16, 1939 reveals the presence of callus about the fracture site. Fig. No. 4. The fracture site is still visible, however, but clinically, the fracture is solid.

Case VI. C. C., age 50, was struck by a car on November 20, 1938, sustaining a fracture of the right tibia and fibula with a puncture wound of the skin near the fracture, but the tibia was not compounded. Skeletal traction was put in his heel and this was left in place for about three weeks. The patient was none too cooperative. At the end of the three weeks period the fracture was not in a satisfactory position, so on December 30, 1938, a vitallium plate and vitallium screws were applied. X-ray made on January 31, 1939, revealed nice position of the plate with the screws holding well. He was not allowed to bear weight at this time. On April 13, 1939 x-ray reveals solid bony union in the fibula and clinically solid union in the tibia, although the x-ray reveals that the fracture site has not completely disappeared. The patient is now allowed weight bearing.

A B

Fig. 3.—Case V. K. D. (A) X-ray on admission. (B) After Skeletal traction applied. Loose fragment rotated. Open reduction done.

SUMMARY

1. Six cases are reported in which we

Fig. 4.—Case V. K. D. X-ray six months later. Too early weight bearing accounts for bowing in Ap. view.

have used vitallium screws. In five of the six cases dissimilar metals have been used.

2. All cases have firm bony union. Our oldest case is seventeen months and the most recent is over six months.

3. In no case have we found bone absorption about a single Venable vitallium screw.

4. We feel that vitallium is far superior to other metals when used in bone.

5. Too much credit cannot be given Drs. Venable, Stuck and Beach for their experimental work.

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DISCUSSION

D. H. O'DONOGHUE, M.D.

The Use of Vitallium Screws in Fractures of The Long Bones

Dr. Stuart has given you a very able resume of the present status of the use of vitallium in orthopedic surgery. Obviously, in the length of time at his disposal, it was impossible for him to cover in detail, all of the intricate matters of technique. I agree, heartily, with Dr. Stuart that the use of vitallium has been a very marked advance in the matter of internal fixation, in reference to orthopedic surgery. I, myself, use it practically exclusively, at the present time, whenever metal fixation is indicated. I must confess that I am considerably more prone to use internal fixation since vitallium has been available.

In our enthusiasm, however, I think we must be exteremely careful not to lose sight of the very grave responsibility resting on the surgeon who uses metallic internal fixation. It is true enough that with vitallium, we feel that we have escaped one of the major complications of internal fixation; namely, delayed bone necrosis where metal is applied. We have, however, in no way affected the more immediate complications which so often follow open operation and metal fixation. Many of you, I am sure, are familiar with Dr. Sherman's work, particularly in reference to the use of steel plates for fractures. Dr. Sherman still uses steel, and still gets beautiful results. However, we are all familiar with the many grave tragedies which have resulted from the use of metal fixation, indiscriminately following Dr. Sherman's excellent work. We have no evidence whatever that vitallium stimulates bone repair. As a matter of fact, it probably retards it, although to a lesser extent than metals formerly used. We know that the use of vitallium, in no way decreases the hazard of early postoperative infection, which is one of the major tragedies in this type of work. It is sincerely to be hoped that the popularization of vitallium will not cause to return the wave of tremendous postoperative infections which follows more or less indis-

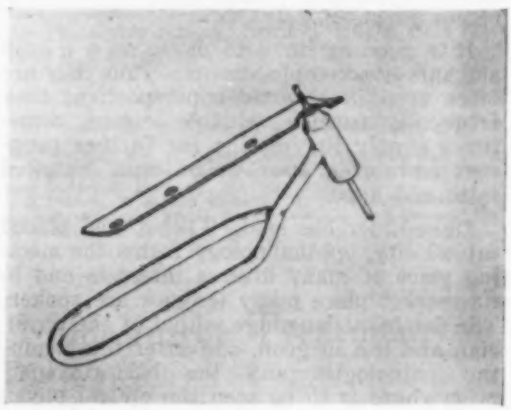

Fig. 5.—Instrument which enables us to center drill hole in the plate.

criminate use of metallic plates. Fractures can be treated only with utmost care in technique and with the very acme of asepsis.

Let me repeat, I think vitallium is a very marked advance in treatment of fractures, but let me caution against these particular things: first, the dangers of postoperative infection, following open operation of the fracture; second, the possible retardation of union by open operation, with the loss of tissue fluid, etc.; third, the deceptive ease of obtaining and holding reduction with intern-

al fixation. There must be an inhibition to open operation in cases which can be better treated by more conservative methods.

These comments are offered, of course, as an addition to Dr. Stuart's paper, rather than as a criticism of it, as I know from personal conversation that he holds the same ideas on this subject as I hold.

Dr. Stuart (in closing). I appreciate Dr. O'Donoghue's discussion and his words of caution that I failed to include. I feel that every fracture that can be treated by the closed method should be done so, and only when we fail to either reduce the fracture or hold the previously reduced fracture in proper alignment, do we advise and urge an open reduction. I exclude certain fractures as of the hip, patella, and olecranon for I believe they should always be opened up.

Some Recent Advances in Ophthalmology*

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By your election I am to give the Chairman's address, and though I have devoutly wished for that quality of inspiration possessed by the ideal teacher it seemed to me that the most useful thing I could do might be to consider in general terms the present status of ophthalmology and mention some recent advances.

It is good at times to pause on a hilltop and survey accomplishments. Thus they are often seen in a broader perspective; they frequently furnish valuable lessons, sometimes supply suggestions for further progress and often spur us on with renewed faith and hope.

Duke-Elder has said, "Like a well placed capitol city, ophthalmology forms the meeting place of many diverse interests and in its market place many tongues are spoken. The dominant language is that of the physician and the surgeon, and after these come the pathologist and the bacteriologist; everywhere is to be seen the optical physicist, and infiltrating the crowd, and becoming more important and indispensable as time goes on, are the biochemist, the physiologist, the neurologist and the psychologist."

All aspects of ophthalmology are advancing. In 1881 Sir William Bowman said, "The particular portion of the medical art with which we ourselves are concerned has grown of recent years to be so large and of such copious and diverse promise, and to present itself under so many natural subdivisions."

Two years ago (1938) Duke-Elder said, "Ophthalmology has become complicated out of all recognition and enriched by many harvests garnered by the ophthalmoscope, the microscope, and the culture medium of the bacteriologist; but it is again, I think, undergoing a revolution — a revolution less spectacular and dramatic than the previous one because we are delving much more deeply into more subtle, more fundamental, and more difficult things. Hitherto we have been dealing grossly with cause and effect, and have busied ourselves with the structural ruins which disease has left behind; now we are probing more deeply to try to determine the more subtle nature of the initial defect, to pass from the study of structures composed of molecules or atoms, to look beyond anatomy and pathology to biophysics and biochemistry."

An unsolved fundamental problem in ophthalmology is the nature of the intraocular fluids, the control of intraocular pressure, and the mechanism of glaucoma. According to the methods of investigation the aqueous has been considered a filtrate, a secretion, a dialysate. And now by more accurate methods it is found to have a higher osmotic pressure than the blood, cannot be considered a simple dialysate, and will require further investigation.

The prevention of cataract development is still not understood, but studies are going on.

Our knowledge of vitamins is almost daily advancing. Vitamin A plays an important part in metabolism of epithelial tissues. Its deficiency causes xerophthalmia and keratomalacia, and its value may be considerable in treating corneal ulcers. It is important in regeneration of visual purple and its deficiency leads to night blindness. Presence of

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large quantities of carotin, the precursor of Vitamin A, in the pigment epithelium suggests the possible influence of this layer on the function of the retina. Keratoconus has been experimentally produced in the rat by Vitamin A deficiency.

Vitamin B1, thiamin chlorid, is of definite benefit in the treatment of optic neuritis, even the toxic amblyopia thought to be due to alcohol and tobacco. Vitamin B2, Riboflavin, appears to promise definite aid in the treatment of Keratitis. Deficiency of Vitamins C and B2 may be factors in cataract development. Vitamin D is the growth vitamin and has some value in myopia in children and Vitamin K is thought to be useful in some cases of hemorrhagic retinitis.

In the field of chemo-therapy we now have sulfanilamide which is so eminently successful in trachoma and gonorrheal conjunctivitis. In other words for them we now have a "magic bullet." In fact with sulfanilamide it is thought that trachoma can be eradicated from America in one generation.

Thanks to Lawrence Post, we must not forget the group of patients with headaches apparently related to the eyes not relieved by careful correction of refraction who have a relatively low minus Basal Metabolic Rate and are relieved by administration of thyroid.

Heparin offers much promise in thrombosis of the central retinal vein but at present its high price makes its use almost prohibitive.

Castroviejo and others have given us a practical technic for keratoplasty or transplantation of corneal tissue with which is obtained practically 100 per cent "takes," but only about 20 per cent of the transplanted corneas remain clear.

Thanks to the work inspired by Gonin, the operation for retinal detachment now is successful in 30 to 50 per cent of cases, while previously the treatment of retinal detachment was hopeless. This low percentage is still a challenge to the ophthalmic surgeon for he is accustomed to a very high percentage of success. Yet we must consider the nature of retinal detachment and that its prevention involves heredity and eugenics in addition to hygiene.

Stokes has given us a practical logical physiological operation for dacryocystorhinostomy. Dimitry has given us the simplest procedure for such an operation but it appears that it would be more likely to be complicated by granulations than Stokes' procedure.

I wish to mention the increased safety of cataract operations afforded by retro-bulbar anesthesia, akinesia and the sutured conjunctival flap.

Orthoptics are becoming more practical due to improved methods.

Perimetry including scotometry in every day practice has often been neglected chiefly because its study with its crude equipment consumes so much time and patience. Yet its value in early diagnosis and in the promotion of safety with airplanes and automobiles deserves more attention.

In the field of optics we are grateful for the crossed cylinder, the streak retinoscope, aneiseoconic lenses, contact lenses and telescopic spectacles.

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A Resume of the Advance Made in the Treatment of Human Pellagra*

With Observation Made on 50 Cases Treated With Nicotinic Acid and Whole Yeast Compounds*

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A brief resume of experimental concepts, clinical observations and facts known about vitamin B and its deficiency states, seems fitting and necessary at this time, to fully appreciate the results observed in treating human pellagra with nicotinic acid.

*Read before the Section on General Medicine, Annual Meeting Oklahoma State Medical Association, May 8, 1940.

HISTORY OF PELLAGRA

To Gaspar Casal of Spain in 1735, goes the honor of describing pellagra as a morbid enity. His work was published in 1762 in which he called the disease "mal de la rosa." He stated, "A peculiar disease consisting of a combination of scurvy and leprosy." (1) Antonio Pujati (2) in 1755 taught and de-

scribed and called it "Alpine scurvy." Frapolli (3) in 1771 named it "Pellagra" meaning rough skin. Babcock and Gray each reported a case in the United States in 1834 and 1864 respectively. From this point on many cases were reported, chiefly, from the southern portion of the United States and the Mediterranean basin. Grimm reported 323 cases in 1912.

ETIOLOGICAL HISTORY

The disease was early prevalent around the Mediterranean Sea, and apparently ran in epidemics, changing its abode from one country to another with apparently no change in the country's economic status. I am informed in 1912 in Italy, where it had previously been present in epidemic form, that the country was almost free of the disease at that time. The same circumstance occurred in Egypt. In the southern portion of the United States, one sees this same periodicity in observing the disease from year to year. Thus, it has been very difficult to work out its etiology. Nelson (4) states, "every disease-producing agency conceivable" has been offered as the etiological factor. However, food deficiency has held an important place for over two hundred years. The "Maize" theory held by Lombrosa (5) was almost universally accepted. In 1905 Sanbon (6) thought the disease was disseminated by the buffalo knat. Allessandrini and Scala (7) felt that the disease was due to the action of silicon in collodial form, which was present in drinking water. Roberts (8) said that pellagra was transmitted by the mosquito, while Jennings and King (9) concluded that it was carried by the stable fly. Goldberger working through the United States Public Health Service, conducted a series of experiments in prisons, orphanages, insane asylums and hospitals and was able to stop epidemics noted here, by feeding a diet high in meats, eggs, green vegetables, fruits and legumes. At a Mississippi penal farm, Goldberger and Wheeler (10) restricted a diet of 11 male convicts, six of whom developed pellagra in six months. They also noted that women between 20 and 40 years of age were most frequently affected, that it was three times more prevalent in women than in men. Grimm (11) observed that 15 per cent of pellagra occurred in the first 15 years of life.

Funk in 1911-12-13, stated that his II factor C6H5O2 N was nicotinic acid which was isolated from rice polishings and yeast. It had by itself no therapeutic action in treating polyneuritic pigeons but did augment the actions of the other fractions. His I fraction from yeast caused improvement in polyneuritic birds, while the I and II fractions cured them readily, thus showing that nicotinic acid or II greatly augmented the action of I. When all three fractions were added even greater improvement was noted. This work was later confirmed by Szymanska and Funk and Casimar Funk. In 1918, Goldberger, Wheeler and Sydensticker, (12) after considerable experimentation, declared that pellagra as the disease is known, was a fusion of two closely related syndromes with possibly two separate factors as the cause.

Other observers working in different parts of the world have described certain types of pellagra, the symptomatology of which does not fulfill the requirements for an accurate diagnosis, of the pellagra we see in the southern part of the United States. Some of these observers found the dermatitis and glossitis without the mental changes, while others described atypical types of dermatitis, not identical with our pellagra.

Goldberger and Tanner (13) first introduced yeast in the treatment of pellagra and set the curative dosage. In 1930 Goldberger, Joseph and Sebrell (14) used liver extract to cure black tongue in dogs. The treatment of human pellagra with liver extract was done in 1933 by Ramsdell and Magness. (15) Spies, Payne and Chinn (16) proved that the PP factor of Goldberger was not the same as the intrinsic factor of Castle in pernicious anemia. This work was of importance because of the close clinical relationship between the macrocytic anaemias and pellagra. Both diseases at times, seem to be inseparable, especially those so called "pellagra sine pellagra." Some of these cases have the stomatitis, glossitis, macrocytic anaemias, with neurological changes which are indistinguishable from pernicious anemia, unless a very close analytical study is made.

Elvehjem, Madden, Strong and Wooley (17) in September, 1937, reported that nicotinic acid would cure black tongue in dogs. Street and Cowgill (18) confirmed these findings while Chick, Macrae and Martin (19) cured black tongue in swine. Sebrell Onstott, Fraser and Daft (20) found that 6 mg. of nicotinic acid twice a week would prevent the disease in dogs on a pellagra producing diet. Spies, Cooper and Blankenhorn (21) treated four cases of human pellagra while Fouts, Holmer, Lopovsky and Jukes (22) reported that 500 mg. of nicotinic acid was not as good as liver filtrate. Harris (23) reported improvement in five cases treated with nicotinic acid. Spies again recommended that the patient be given a well balanced diet with nicotinic acid. Smith, Ruffin and Smith, (24) added a case, and suggested nicotinic acid in drinking water as a pellagra preventing caution. Sebrell and Onstott (25) found that dogs, on a black tongue producing diet while taking nicotinic acid will die if ribro-flavin is absent.

One or two other notations should be made which may be of some value. Chittenden and Underhill (26) produced black tongue in dogs on a diet containing an abundance of meat and yeast. Both of these foods will cure the Goldberger type of black tongue. David T. Smith Persons and Harvey believe the Underhill Mendel type of black tongue was probably due to vitamin A deficiency.

COMPONENTS OF VITAMIN B

The most recent developments in the isolation and synthesizing of the component parts of vitamin B have thrown great light on the subject as a whole. Vitamin B1 crystals were isolated by Windaus in 1931. Jansen and Donath; (27) Peters, (28) Odake; and van Veen isolated B1 from baker's yeast and rice polishings. In 1936 it was synthesized by Williams and Ciine. A lack of B1 in man produces beriberi, ocular disorders, nausea, retards growth, produces polyenritis and vascular phenomenon. A normal sized man excretes normally in his urine 12 to 35 international units of vitamin B1 in twenty-four hours.

Flavin is the water-soluble and heat-stable yellow pigment occurring in foods. It was synthesized by Stern and Kuhn (1934). It is thought by some to aid the enzymatic or harmonic activitiy of the cell and has some function in cell respiration. Fullers' earth will absorb it from an acid medium, and it can be destroyed by the blue violet portion of light and by alkalies. Very little is known of its specific function in the human organism. In the rat and dog, a deficiency of flavin causes loss of weight and retards growth.

Vitamin B3 is an unknown factor probably present in the B complex. Williams and Waterman (29) believe that it is a necessary vitamin to supplement vitamin B1, while Musser (30) states that it is a portion of vitamin B1. Vitamin B3 may also be Jukes' (31) factor or filtrate factor (the antidermatitis factor of chicks). It is not nicotinic acid for Dam (32) did not prevent chick dermatitis on a deficiency diet which contained an abundance of nicotinic acid.

Vitamin B4 is made up, chiefly, of adenine hydrochloride. Some workers believe that B4 assists B1 in the prevention of beriberi while others believe that it assists Goldberger's PP factor in preventing pellagra. Gyorgy (1935) (33) states the B4 is the antiparalytic vitamin while Elvehjem (34) believes that it is the same as the chick antiparalytic factor and that it has something to do with nutrition in humans.

Vitamin B5 has not been isolated. It has been thought by some that B3 and B5 prevents pellagra in chickens.

In a recent personal correspondence, (June 3, 1938), Paul Gyorgy makes the following statement in regard to vitamin B6. "Unquestionably vitamin B6 is a base, which in foodstuffs is apparently attached to the protein as a prosthetic group. The free base is readily soluble in water, alcohol and in an alcohol-ether mixture 1:20. The hydrochloride with the empirical formula C8 H12 Na 3 C1 (melting point 206 to 208 degrees) is sparingly soluble in alcohol and almost insoluble in acetone. Both the free base and the hydrochloride can be purified by sublimation. In rats fed a vitamin B complex free diet supplemented with B1 and riboflavin, complete recovery can be obtained only by the combined addition of vitamin B6 and the so-called filtrate factor." It is probably the Y factor of Chick and prevents dermatitis in rats. Its relation to the human organism has not as yet been determined but its presence will not prevent pellagra in man.

The PP factor of Goldberger is probably nicotinic Acid (C6 H5 O2 N) or pyridine carboxylic acid.

A TEST FOR PELLAGRA

It has been recently brought to our attention that porphyrin is excreted in the urine in abnormal amounts in pellagra (36) (37). The exact metabolism of this group of chemicals is not fully understood, but it is thought that by uniting with iron and a protein, protoporphyrin type 3 is an intermediary in the formation of hemologin and myoglobin. Coproporphyrin 3 is an abnormal product excreted in pellagra and is believed to be a sensitizing agent.

It has been found by Spies (38) and Sosaki that the administration of nicotinic acid diminishes the amount of porophyrin in the urine; that the porophyrin in pellagrous patients, is not excreted in the amounts parallel to the severity of the pellagra.

RESULTS OF NICOTINIC THERAPY

In the American Journal of Digestive Diseases, February, 1939, I reported the results of treatment with nicotinic acid on ten cases of pellagra. The following conclusions were drawn:

First: Nicotinic Acid 50 mg. to 500 mg. per day is specific in curing the acute dermatitis and glossitis of the Goldberger type of pellagra.

Second: Prolonged use of 150 mg. to 500 mg. of Nicotinic Acid a day will cure the chronic dermatitis with abrasion and chronic glossitis of typical pellagra.

Third: Nicotinic Acid in doses up to 500 mg. will partially control the diarrhea of pellagra.

Fourth: Nicotinic Acid from 50 mg. to 500 mg. a day is of very little aid in the treatment of the neuritis and neuresthenia

associated with pellagra in humans, except those of acute delirium.

Fifth: The general health of the pellagrous patient is only slightly enhanced by treatment with nicotinic acid (50 to 500 mg. per day).

Sixth: There is probably another factor or factors, other than nicotinic acid, which is necessary to completely cure the human pellagrous patient.

It was thought that by giving nicotinic acid and Whole Yeast Compounds further improvement might be obtained. Having reviewed 50 cases treated over a period of from two to six months on the above mentioned combination, it was observed that the addition of therapeutic doses of Whole Yeast Compounds did not enhance the values secured by nicotinic acid alone.

A few cases were observed on therapeutic doses of Nicotinic Acid, Whole Yeast Compounds and Cod Liver Oil and orange juice without improving the general health above that secured with nicotinic acid.

Conclusions drawn from this fact lead to the following hypothesis:

First: The other factor or factors necessary to completely cure pellagrous patients, are not found in sufficient amounts in the commonly known Whole Yeast Compounds, to warrant their use as an adjunct to nicotinic acid therapy.

Second: Whole Yeast Compounds may not contain the factor necessary to enhance nicotinic acid therapy.

Third: The curative factor other than nicotinic acid may not be a vitamin.

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Anaesthesia and Analgesia in Obstetrics and Its Relation to Asphyxia Neonatorum*

R. J. REICHERT, M.D.

MOORE, OKLAHOMA

There may be at the present a few extremists who feel that woman is meant to suffer the pangs of labor, but the majority of us feel that it is our duty to furnish both anesthesia and analgesia in some form during the painful stages of labor. Chief among the factors which have shaped the development of analgesia and anesthesia in labor is the fact that labor is a variable period which may properly extend from a few minutes to 24 hours or even longer, being in this respect totally different from the requirements in ordinary surgical procedure. The ultimate fate of the present methods may well hinge on the price the infant must pay for the mother's comfort.

We must express our results and expectations in terms of a norm, and to understand the effects of a drug we must have a knowledge of normal physiology. The animal, and we believe, the human fetus makes rhythmical respiratory movements in utero (1). When the fetus is removed from the fluid medium, the established respiratory rate continues and the animal "breathes and develops quite normally" (2). This theory as to how respiration is brought about is far different from the older theories of mechanical, chemical, or physical stimulation. The normal fetus exists in utero with a low oxygen content in its blood and in a constant state of cyanosis. Due to impairment of placental circulation by retraction of the placenta at birth the oxygen content of the infant's blood is again reduced. Cyanosis must be considered the normal state for an infant at delivery and becomes pathological only if unduly prolonged.

ABNORMAL PHYSIOLOGY

Factors which may produce abnormal physiology of the fetus and the newborn are numerous, and in considering the results of the drugs used, we must eliminate, control, or at least take these into consideration in our reports.

Influencing factors may be grossly divided into (a) those of the infant; and (b) those of the mother.

a. Infant
   1. Abnormalities of body and organs
   2. Pre- or post-maturity
   3. Position: referring to the infant in relation to pelvis
   4. Diseases in utero; i. e. syphilis

b. Mother
   1. Abnormalities of body, especially pelvis or organs
   2. Diseases of mother during pregnancy or at time of delivery

CHOICE OF DRUGS

The drugs most commonly used at present are ether, chloroform, nitrous oxide-oxygen, barbiturates quinine and opium derivitives. All of the above drugs when administered in doses of sufficient amount to the pregnant animal will retard and at times arrest the respiratory movement of the fetus in utero. (1). The most complete report given in recent years on the effects of the abovementioned drugs on the newborn infant is one by Clifford and Irving. (3) They report on 463 cases of normally delivered, full term, vertex presentation infants.

TABLE I

Comparison of Morphine, Pantopon and Barbiturate Anesthesia (3)

	Morphine 25 Cases Pontopon 75 Cases	Barbiturate 260 Cases
Complete maternal amnesia	34%	78%
Deaths in this series	2	0
Artificial resuscitation required	23%	3%
Infants physiologically normal at birth	43%	63%
Does a definite relation exist between time of medication and condition of infant?	Yes	No
Does a definite relation exist between size of dose and condition of infant	Yes	No

In their statistical comparison they conclude (1) in the case of morphine and pantopon a definite relation exists between the time interval from medication to birth and

*Read before the Section on Pediatrics and Obstetrics, Annual Meeting, Oklahoma State Medical Association, May 2, 1939, Oklahoma City.

the number of physiologically abnormal infants at delivery. Medication given to the mother less than 2 hours before birth is associated with some degree of abnormality in 47 per cent of the infants. This figure increases to a peak of 79 per cent abnormality in the group receiving medication 4 to 6 hours prior to the time of birth and then falls to 33 per cent when the time interval becames 8 hours or more.

The only two deaths encountered in 410 cases comprising this study occurred in the 75 receiving pantopon. From an earlier study by Clifford it was found that the premature infants of mothers receiving morphine within 4 hours of delivery encountered twice the deaths of infants whose mothers had not received the drug. It was also shown that the death rate increased as the size of the maternal dose increased. In the light of these facts the use of morphine or pantopon as a method of obstetrical analgesia would appear to be not only unsatisfactory for the mother but dangerous to the infant. In comparing the use of opiates and barbiturates the outstanding feature is that in the use of barbiturates a definite relation does not exist between time of medication and condition of infant and no relation exists between the size of the dose and condition of the infant.

ANALGESIA VERSUS NO ANALGESIA

Clifford and Irving (3) in their report give a comparison of 53 cases delivered without analgesia and 260 cases delivered under the combination of pentobarbital-scopolamine-rectal ether-nitrous oxide oxygen ether.

TABLE II

Analgesia versus no Analgesia

	No Analgesia	Pentobarbital-scopolamine-rectal ether-nitrous oxide oxygen analgesia
Maternal amnesia	0	84%
Fetal mortality	0	0
Neonatal mortality	0	0
Infants Physiologically normal	73%	62%
Infants artifically resuscitated	0	2%
Infants abnormally cyanotic	23%	21%
Minutes to first breath	1.0	1.0
Minutes to first cry	1.6	4.7

In this comparison we should note that 2 per cent of the group receiving analgesia needed artificial resuscitation and none in the No Analgesia group. Also worthy of consideration is the comparison of 1.6 minute to first cry in the No Analgesia group compared with 4.7 minutes in the Analgesia group.

When I first started the practice of medicine I tried to apply my hospital training to home deliveries. I first used a combination of morphine-scopolamine rectal-ether and drop ether. The rectal-ether was very unsatisfactory because a large percentage of the mothers would not retain the fluid. Morphine was soon omitted for it was quite evident that labor was markedly retarded and the drug was producing some asphyxia in the infant. Scopolamine was found undesirable because in a large per cent of the cases it produced delirium of the mother and very little cooperation resulted. Chloroform was soon found to be preferable to ether because (a) it is not inflammable; (b) it is not objectionable to inhale; (c) its effects are rapid and the amount of desirable anesthesia can be readily obtained. In complicated cases the use of ether has been continued because of the large margin of safety over chloroform when its administration must be placed in the hands of an inexperienced person.

In my last 293 home deliveries I have used a combination of pentobarbital-sodium as a basic analgesia and chloroform or ether in the last stages. The pentobarbital-sodium was used in dosages of 3-6 grains, depending on the stage of labor and the duration. In this series of cases I have had no maternal mortalities and of the seven fetal deaths none could be attributed to the drugs used. I have been able to get cooperation from the mother, which is a very great advantage. In only four cases was it necessary to resort to any kind of artificial resuscitation. One outstanding observation is that the analgesia baby is a dopey or sleepy baby which in home deliveries is annoying to the physician as well as to the others concerned.

SUMMARY

1. The ideal drug or combination of drugs for obstetrical analgesia has not yet been perfected.

2. Opium derivatives are dangerous and are prone to produce asphyxia neonatorum, especially in the premature infant.

3. The barbiturates produce a dopey or sleepy baby but do not increase the fetal mortality.

4. No routine method is applicable to all cases.

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Cheese contains in concentrated form many valuable nutritive elements of milk and is not indigestible as is commonly believed, *Hygeia, The Health Magazine* for March declares.

EDITORIALS

MOLIERE AND MEDICINE
1622-1673

Moliere's stinging indictment of the medical profession of his day should be considered in the light of medical history and the deplorable state of the Medical Faculty in Paris during his lifetime. It must be remembered that he was standing on the threshold of a world-wide intellectual awakening, with an individualistic freedom of thought and expression which was shaking the credulity of society and threatening the chains of tradition.

After twelve centuries of medical lethargy, the Renaissance resulted in a rude awakening of the profession. A critical scrutiny of time-honored practice gradually brought about certain reforms; additional knowledge led to more logical methods. In Moliere's day alchemy was being replaced by scientific chemistry, modern conceptions of anatomy and physiology were gradually gaining recognition. The study of physiological chemistry was underway. There was a growing interest in pathology and microscopy was being developed. Universities and scientific societies were being founded; medical and other scientific periodicals were appearing, and dissecting as a means of teaching anatomy was becoming more common.

In spite of all this, therapeutic credulity tenaciously clung to ancient folk-ways of practice. This was particularly true in Paris. The Faculty, entrenched behind centuries of tradition, was slow to accept anything that questioned the authority of Hippocrates and Galen. Furthermore, there was much jealousy and controversy within the Faculty as well as opposition to all that came from without. At this particular time the Paris Faculty had a formidable rival in the newly founded Chambre Royale of Renaridot, and Guy Patin, the fiery, versatile Dean of the Faculty, was out-spoken in condemnation of the new organization. He also made fun of the Court physicians and openly attacked their therapeutic vagaries, even attributing the death of certain prominent members of society to their petty bickering and their vaunted panaceas. Obviously it was a day of extravagant medication. Even the King reluctantly submitted to repeated bleeding and purging.

Multiple consultations with serious disagreements were common, giving rise to popular gossip and loss of confidence. Perhaps Moliere had access to the *Journal de la Sante du Roi*, which was kept by the Court Physicians, Vallot, Daquin and Fagon, and presented an account of Louis XIV's health and medical care. In it we find that the profligate life of the Court with its "gallantry, gluttony and passion," exacted its tribute of the King and supplied ample material for Moliere's consultation episodes, excessive bleeding and extravagant medication.

Though there has been much speculation as to whether Moliere may have had personal reasons for his scatching ridicule of the medical absurdities of his time, in the light of existing conditions, such a provocation would seem superfluous. The stage of ridicule of pedantry was handed down to him. Before taking up the serious indictment of the medical profession, he had severely scored the evils of society, the Court and religious bigotry.

No doubt his progressive illness and his personal contact with his own physician, Monsieur de Manvillian, whom he highly esteemed, made the shortcomings of the profession more obvious to him. But we find that in the presence of the King, he humorously taunted his physician by saying: "We reason with one another; he prescribes me remedies; I omit to take them and I recover." Naturally he may have suffered a keen disappointment because of his doctor's inability to arrest the progress of his pulmonary disease, but the hopelessness of advanced tuberculosis in his day was a matter of common knowledge and would have been accepted by his generous spirit without rebellion.

Omitting many interesting details which might be employed in support of our position, we hasten to express the belief that Moliere's supreme adventure against the evils of his day was free from personal grudge and without genuine malice toward the medical profession. Neither should we make the impression that Moliere was a militant reformer, losing sight of all else. He was too alert and broad-minded for that. Among his most valuable assets was the power to interpret the temper of society. He did not miss the fact that all Paris was impatient for a good laugh at the expense of the medical profession. The work of his genius was never the result of enmity or malice. It needed only the occasion for comedy, with a moral, and he was off with the enthusiasm and devotion of a Romeo. To Moliere such an opportunity came as the breath of life.

No doubt Moliere found much of his comedy in his own misery. In his last play, *Le Malade Imaginaire,* in which he presents Argon as the imaginary invalid, we find genuine suffering and even the harbinger of death hiding behind an imaginary malady. Of all the comedies in which Moliere takes the medical profession to task, this last one most deserves a careful reading.

Moliere took the part of the imaginary invalid and after the third performance, he confessed that he no longer had strength for the struggle, but added "how much a man must suffer before he can die." He was urged not to tax his strength by another appearance on the stage. His reply reveals his character. "What would you have me do? There are fifty poor workmen who have only their day's wages to support them; what would they do if I did not act?"

On Friday evening, February 17, 1673, he returned to the stage for the fourth performance, and while in the final scene he experienced a convulsive seizure which, perhaps, his audience misinterpreted as a part of the imaginary malady. The performance was completed but the genuine premonition caused him to sink into a chair back of the stage, never to rise again. He was carried from the theatre which the tuberculous Cardinal Richelieu had built, to the "Rue de Richelieu where he then lived." He was put to bed and his wife had gone for a special pillow, when he had a paroxysm of coughing and raised the fatal blood. Spitting of blood was not new to Moliere and seemed not to frighten him, but this was his last. Soon he was suffocated by the crimson flood and died in the arms of two sisters of charity, who had found refuge in his home while they were temporarily in Paris begging alms.

At the age of fifty-one, in less than an hour after successfully playing the part of the imaginary invalid, Moliere, one of the greatest figures in French literature, was dead.

Moliere rendered a great service to humanity through his satirical arraingment of the medical profession. The antiquated and extravagant practice of the Paris Faculty and its opposition to new advances evidently gave Moliere much concern and inflamed his genius for reform. It is unfortunate that he could not look ahead one hundred and fifty years to Laennec, that tuberculosis medical genius, who made poetry of pathology and in the fleeting moments of a short life-time, laid the foundation for the diagnostic and therapeutic measures promising ultimate defeat of the disease which swiftly terminated his exceptional life.

Soon after Moliere's death, Paris was leading the world in medical thought. It is difficult to estimate his influence in this direction. No doubt it was greater than his biographers have realized.

In this bit of medical history there is a valuable lesson for the medical profession. While combatting unjust criticism and the proposed trends toward socialized medicine, the members of the profession should recognize changing conditions and strive to give the best possible medical service with a minimum of confusion and expense. If it is difficult for the physician to keep abreast of medical progress, it is much more difficult for the patient to comprehend the shifting methods of practice. Under such circumstances, the physician must become an educator. The patient should understand why modern medicine becomes more difficult and more costly, but at the same time, more efficient and more readily available to all classes. The people need more knowledge of what medicine has done in the past and what it is capable of doing today. They should know of the individual physician's willingness to serve and the organized efforts on the part of the profession to make medical service available to all the people all the time. Lack of knowledge often leads to criticism and intolerance.

Politicians are ready to follow any lead that promises political expediency. Through generous service and patient instruction, the medical profession may guard against both comedy and tragedy.—L. J. M.

College of Physicians Elects Officers

Dr. Roger I. Lee, Boston, a Trustee of the American Medical Association, was named president-elect of the American College of Physicians at the annual session in Cleveland April 1-5, and Dr. James D. Bruce, Ann Arbor, Mich., was installed as president.

Vice presidents elected were Drs. Robert A. Cooke, New York; James G. Carr, Chicago, and Henry M. Thomas, Jr., Baltimore. Drs. William Gerry Morgan, Washington, D. C., and James B. Herrick, Chicago, received the title of "master" of the college, the first time this honor had been conferred in eleven years. Only six physicians have previously been so honored.

Vitamin Advertising and Mead Johnson Policy

The present spectacle of vitamin advertising running riot in newspapers and magazines and via radio emphasizes the importance of the physician as a controlling agent in the use of vitamin products.

Mead Johnson and Company feel that vitamin therapy, like infant feeding, should be in the hands of the medical profession, and consequently refrain from exploiting vitamins to the public.

Woodward Doctors Purchase Hospital

Dr. C. E. Williams has been elected president of the corporation of doctors which has purchased the Woodward General Hospital. Dr. D. W. Darwin, was named vice-president and Dr. C. W. Tedrowe secretary-treasurer.

Other members of the corporation board are Dr. Joe Duer, Dr. T. C. Leachman, Dr. V. M. Rutherford, and Dr. M. C. England.

STUDIES IN THE AVITAMINOSES

This page is the fifth of a series on vitamin deficiencies presented by the research division of The Upjohn Company because of the profession's widespread interest in the subject. A full color, two-page insert on the same subject appears in the April 27 issue of The Journal of the American Medical Association.

ONE of the specific lesions resulting from thiamin deprivation consists of degenerative changes in the myelin sheaths of nerve fibers. In peripheral nerves, the myelin breaks down into small globules and finally disappears, and the axis-cylinder undergoes atrophy and fragmentation. Degeneration has been described also in the spinal cord, especially in the posterior columns and anterior and posterior nerve roots, and in the posterior spinal ganglions and the anterior horn cells.

Nerve degeneration caused by vitamin B_1 deficiency. Marchi method of staining, showing deteriorated myelin as black dots in the fasciculi. (At right)

Nerve degeneration in same patient. Weigert stain; normal myelin sheaths in the microscopic section appear dark blue; degenerated nerve fibers do not take the stain. (Courtesy of H. M. Zimmerman, M.D., Yale University School of Medicine and the New Haven Hospital.)

The Neurologic Manifestations of Vitamin B_1 Deficiency

Above, peripheral neuritis of nutritional etiology; note limited dorsiflexion. At right, improvement in dorsiflexion after two and one-half weeks of thiamin chloride therapy. (Courtesy of Henry Field, Jr., M.D., University of Michigan.)

THE early manifestations of vitamin B_1 deficiency affecting peripheral nerves are pain and burning along the involved sensory neurons and impairment of motor nerve function. If the deficiency remains uncorrected, fragmentation of the axis-cylinders of motor nerves follows, leading to further loss of function and atrophy of the innervated muscles. Administration of thiamin chloride over a prolonged period slowly produces regeneration of the involved neurons. If complete degeneration of cells and axis-cylinders in the central nervous system has occurred, regeneration cannot take place.

UPJOHN

ASSOCIATION ACTIVITIES

New Post-Graduate Obstetrics Course is Under Way

Under the sponsorship of the University of Oklahoma School of Medicine, a new intramural post-graduate course in practical and clinical obstetrics and allied subjects is getting under way late in May in Oklahoma City. Enrollment for the course was to begin May 20, continuing for two weeks. The course then will be repeated intermittently as circumstances and demand may justify.

Through the addition of a full-time teacher, Dr. Edward N. Smith, the School of Medicine is able to sponsor the course. Active material and financial assistance are being provided through the cooperation of Dr. Grady F. Mathews, Commissioner of the Oklahoma State Department of Health, and through Children's Bureau of the Department of Labor, Washington, D. C.

Although the University of Oklahoma has carried on extension classes in various branches of medical instruction for many years, and with excellent results, an extension class must necessarily leave uncovered an important field in medical review, the sponsors pointed out. They give little chance for a review of subjects from a clinical angle, and even less chance for the physician to place his hands on a living patient. To bridge over this defect, it was stated, and to provide the long-sought opportunity for the physician to obtain, at a minimum expense and in a minimum period of time, a comprehensive review of the fundamentals of practical obstetrics, this course was conceived and devised.

The wards of the University Hospital have been made available to the qualified enrollees of the course, as well as a newly organized obstetrical out-patient clinic which will be administered specifically for the benefit of the post-graduate students. In addition, the wards and personnel of the Home of Redeeming Love will be available for demonstration and teaching practice. The Departments of Anatomy and Pathology have loaned their full facilities, which includes gross and microscopic specimens, manikins, models, charts, etc.

As allied with obstetrics, there will be instruction in anatomy, pathology, pediatrics, neuro-surgery, urology, surgery, medicine, and intensive instruction in obstetrics.

Applications will be considered only from regularly qualified physicians in good ethical standing. Not more than four applicants will be accepted for enrollment at any one time, which will assure individual and highly personalized instruction.

No fee is charged for the course. There is a registration fee of $25.00, which must accompany the application for enrollment. This fee covers breakage, depreciation on materials used, clerical expense involved, and incidentals. No diploma will be issued, but upon completion of the course, a certificate of attendance will be furnished, with a refund of $10.00 to the physician, unless unusual items of breakage or damage to University equipment has been incurred.

Additional information may be obtained by corresponding directly with the Department of Post-Graduate Obstetrics, Room 8, University Hospital, Oklahoma City.

In conjunction with the physicians' course, and with the same sponsor and cooperating agencies, the University of Oklahoma School of Nursing will offer a four months post-graduate course in obstetrics and allied subjects, the purpose being to enrich and broaden the experience of the graduate nurse through the opportunities existing in this field.

Forty-Eighth Annual Session Attracts State Physicians

With the attendance figure standing at 820, and marked by a successful, systematized program of interesting and instructive features, the three-day forty-eighth annual session of the Oklahoma State Medical Association came to a close the afternoon of May 8 with the last general scientific session in the Crystal Ballroom of the Mayo Hotel, Tulsa.

General eulogistic comments were pointed toward the Tulsa County Medical Society, the host group, for the meeting successfully undertaken and carried out. Dr. Maurice J. Searle served as chairman of arrangements.

Dr. Henry H. Turner of Oklahoma City, President-Elect during 1939-40, ascended to the chair of the presidency following his installation Tuesday evening, May 7. His address will be found on page one of this issue. Dr. W. A. Howard of Chelsea, retiring president, was named by the House of Delegates as junior delegate to the American Medical Association meeting.

Elected to the position of President-Elect was Dr. Finis W. Ewing of Muskogee, present councilor of district eight. Dr. Ewing's councilor duties will be carried on by Dr. Shade D. Neely of Muskogee, selection of whom was approved by the House of Delegates.

Dr. William A. Tolleson of Eufaula, who recently was named president of the Southeastern Oklahoma Medical Society, was selected as vice-president. The House re-elected Dr. James D. Osborn of Frederick as its Speaker, and Dr. P. P. Nesbitt of Tulsa as Vice-Speaker. Dr. O. E. Templin of Alva, councilor of district one, only councilor whose term expires this year, was re-named to that position. Oklahoma City will be the meeting place in 1941.

The guest speakers, Dr. Alphonse McMahon of St. Louis, Mo., Vice President of the American Medical Association; Dr. Edward H. Skinner of Kansas City; Dr. Horton R. Casparis of Nashville, Tenn.; and Dr. Curtice Rosser of Dallas, Texas, all received plaudits for their valuable and instructive offerings.

Time before publication of this month's Journal did not permit preparation of the abstracts of the minutes of the House of Delegates meetings, but these will appear in an early isue.

Contract Given For Sanatorium Project

Contract for construction work at the Western Oklahoma Tuberculosis Sanatorium at Clinton has been awarded to F. L. Bray Construction Company, Oklahoma City, at $53,900 by the state board of affairs.

The project includes construction and equipping of the hospital with a heating plant and laundry, and installation of steam tunnels, sewers, water and gas lines.

Dr. Robert U. Patterson, dean of the University of Oklahoma School of Medicine, was the principal speaker at the April meeting of the Garfield County Medical Society in Enid. He discussed the progress and needs of the School of Medicine. Dr. Joseph W. Kelso of Oklahoma City read a paper on "Carcinoma of the Cervix."

Four Oklahoma physicians left late in April for Camp Jasper, Texas, to represent the state in the reserve medical officers' department at spring war maneuvers. They are Dr. C. A. Johnson, of Wilson; Dr. G. E. Johnson of Ardmore; Dr. John L. Day of Supply; and Dr. D. J. Lyons of Seminole. The four will serve in the army hospital during the 28-day war drills.

Binkley New Assistant Managing Director of A. S. C. C.

High rewards for his interest and hard work in the specialty he chose went to Dr. J. Samuel Binkley this past month when he received word of his appointment as assisting managing director of the American Society for the Control of Cancer, with headquarters at 350 Madison Avenue, New York City.

Dr. Binkley, son of Dr. J. G. Binkley of Oklahoma City, during February and March of this year spoke before more than 13,000 laymen and 1,142 physicians in a statewide cancer program under the sponsorship of the Oklahoma State Medical Association, the Women's Field Army of the American Society for the Control of Cancer, and the State Health Department. Such overwhelming success was accorded the program that interest has been directed toward the course by many out-of-state agencies.

Dr. Binkley, who has been serving as assistant chief of the Chest Department of Memorial Hospital, New York City, a capacity he held when he was brought to Oklahoma by the Association and cooperating agencies to conduct the statewide program, was pointed out by Dr. C. C. Little, managing director of the American Society for the Control of Cancer, as having "distinguished himself as one of the nation's foremost educators of the layman in cancer conditions and control."

A graduate of the University of Oklahoma and Harvard Medical School, the young cancer expert is a Surgeon and Rockefeller Clinical Fellow in Cancer Research, and holds memberships in Phi Beta Kappa, Phi Beta Pi, the New York Academy of Science, the International Union Against Cancer, and the Harvard Medical Society of New York. He has appeared on the scientific programs of the International Cancer Congress, the American Association for Thoracic Surgery, and for three years served the New York City Cancer Committee as speaker.

Dr J. S. Fulton is Honored For Fifty Years of Service

Dr. J. S. Fulton was honored at a meeting of the South Eastern Medical Society held in McAlester, April 11, 1940, this being the fiftieth anniversary of his graduation and entrance into the practice of medicine. He was presented with a beautiful bronze plaque which bore the following inscription. "Joseph Samuel Fulton, M. D., 1890-1940. Fifty years of service to Humanity and Organized Medicine."

The presentation was made by Dr. LeRoy Long, of Oklahoma City. He told of Dr. Fulton's long service to organized medicine, how he became a member of the Indian Territory Medical Association in 1891, has held office in the Oklahoma State Medical Association continuously for twenty five years and has never missed but two meetings since its organization in 1906. This very fitting ceremony and presentation was sponsored by Dr. Fulton's Neighbor Physicians and bespeaks the high esteem in which he is held.

In replying to this presentation, Dr. Fulton could not easily control his emotions, as it was all a complete surprise and he could hardly more than thank his friends for such an expression of confidence and esteem.

Dr. W. A. Tolleson of Eufaula was elected president of the society at the meeting. Dr. E. D. Greenberger of McAlester was named vice-president, and Dr. W. H. Kaiser of McAlester, secretary-treasurer.

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Pottawatomie County Society Holds Annual Spring Clinic

With the guest speakers all members of the faculty of the Baylor School of Medicine at Dallas, Texas, the Annual Spring Clinical Meeting of the Pottawatomie County Medical Society was held April 16 in Shawnee. Sessions were conducted in the Civic Room of the Aldridge Hotel.

The guest speakers were: Dr. Walter Grady Reddick, Internist; Dr. Robert Shaw, Chest Surgery; and Dr. O. T. Woods, General Surgery.

At the afternoon meeting, the following talks were made: "The Chemotherapy with Sulfanilamide Derivatives," Dr. Reddick; "The Indications and Results of Surgery in Pulmonary Suppuration," Dr. Shaw; and "The Treatment of Breast Tumors," Dr. Woods. Dr. W. A. Howard, retiring president of the Oklahoma State Medical Association, gave an explanatory talk on the hospital insurance plan which has recently been established in the state.

During the evening session, Dr. Woods spoke on "The Treatment of Intestinal Obstruction"; Dr. Shaw talked on "The Tumors of the Chest Requiring Surgery"; and Dr. Reddick's address was on "The Treatment of Pneumococcal Pneumonia." The talks were illustrated by lantern slides and chalk drawings and were very comprehensive and well-presented.

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INSULIN

. . . used under proper supervision lengthens lives of diabetic children

Prior to the discovery of insulin, diabetes in a child led to severe restrictions in his mode of life and, in most cases, an early death. Today, in contrast, there are hundreds of happy, active diabetic children—leading practically normal lives with the aid of Insulin.

More institutions, more physicians, and more patients are using Insulin Squibb and Protamine Zinc Insulin *Squibb* than ever before. They rely on the quality and dependability of these Squibb Products.

INSULIN SQUIBB—An aqueous solution of the active, anti-diabetic principle obtained from pancreas. It is accurately assayed, uniformly potent, carefully purified, highly stable, and remarkably free from pigmentary impurities and proteinous reaction-producing substances. Insulin Squibb of the usual strengths is supplied in 10-cc. vials.

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MANUFACTURING CHEMISTS TO THE MEDICAL PROFESSION SINCE 1858

Pottawatomie County Society Holds Annual Spring Clinic

With the guest speakers all members of the faculty of the Baylor School of Medicine at Dallas, Texas, the Annual Spring Clinical Meeting of the Pottawatomie County Medical Society was held April 16 in Shawnee. Sessions were conducted in the Civic Room of the Aldridge Hotel.

The guest speakers were: Dr. Walter Grady Reddick, Internist; Dr. Robert Shaw, Chest Surgery; and Dr. O. T. Woods, General Surgery.

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News From The State Health Department

The Oklahoma State Health department has expanded greatly within the past four years, and one of the important ways in which its service has grown has been in the service and benefits offered, without cost, to the private physicians of the state.

This cooperation with the private physicians has been in two forms: payments for physicians' services in venereal disease clinics, baby clinics, laboratory services and similar items, and financial backing for refresher courses.

Speaking in terms of dollars and cents, the state health department, from its 1940 budget, has spent and is spending $107,455 for the benefit of the private physicians of Oklahoma.

This sum, spent directly to benefit the medical profession, equals one half of the total appropriation by the state legislature for public health work in Oklahoma.

The following is a "breakdown" of funds contributed to the medical profession from the 1940 budget of the Oklahoma State Health department:

LOCAL PRIVATE PHYSICIANS' FEES FOR VENEREAL DISEASE CLINICS	$14,800
PART-TIME PHYSICIANS' SALARIES FOR VENEREAL DISEASE CLINICS	6,000
FEES PAID PRIVATE LABORATORY (PNEUMONIA WORK)	3.225
CANCER REFRESHER COURSE	2.250
DELIVERY FEES AND NURSE ASSISTANT AT HOME DELIVERY, DISTRICT ONE	6,320
PEDIATRICS COURSE FOR PHYSICIANS	5,000
LECTURER'S FEES ON PEDIATRICS COURSE FOR HEALTH OFFICERS	960
PRIVATE PHYSICIANS' FEES FOR CONDUCTING BABY CLINICS	500
DRUGS FOR TREATMENT OF VENEEREAL DISEASE	7,500
COST OF LABORATORY SERVICE TO PRIVATE PHYSICIANS	28,500
COMMONWEALTH PARTICIPATION (O. B. COURSE)	11,500
COMMONWEALTH REFRESHER COURSE (8) FOR PRIVATE PHYSICIANS	8,000
CLINICAL COURSE OBSTETRICS IN COOPERATION WITH UNIVERSITY OF OKLAHOMA MEDICAL SCHOOL	12,900
TOTAL	$107,455

Local physicians throughout the state are participating in the venereal disease clinics conducted by the State Health Department, being paid at the rate of $2.50 an hour. Only indigent patients are treated.

The pneumonia control program is available to any indigent patient through his private physician, and the health department pays for sulfapyridine and laboratory work.

The State Health department helped finance the refresher courses in cancer, obstetrics and pediatrics. The registration fees paid by the physicians amounted to less than 10 per cent of the cost of the courses.

Fees are available to private physicians for conducting well baby and pre-school clinics in connection with the county health departments.

The clinical courses in obstetrics are offered to the physicians of Oklahoma by the University of Oklahoma School of Medicine. The course is designed to enable busy physicians to obtain a short, practical course in obstetrics at the University hospital. This course is being financed by the State Health department, in cooperation with University of Oklahoma School of Medicine.

The goal of the State Health Department is to carry out its program, working with the private physicians, and as an aid, it is spending a sizeable portion of its funds for the direct benefit of the private physicians.

SILVER PICRATE

Wyeth

HAS SHOWN A CONVINCING RECORD* OF EFFECTIVENESS IN ACUTE ANTERIOR URETHRITIS

due to Neisseria gonorrheae • Trichomonas vaginalis Monilia albicans

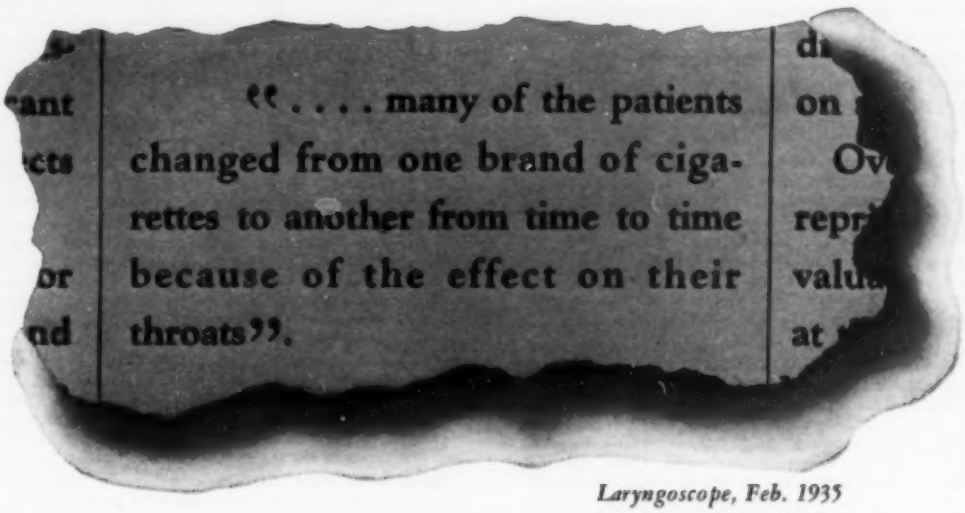
Silver Picrate is a crystalline compound of silver in definite chemical combination with picric acid. Dosage form for use in anterior urethritis: Wyeth's Silver Picrate Crystals in an aqueous solution of 0.5 percent.

Supplied at all pharmacies in vials of 2 grams

Complete literature on Silver Picrate as used in genitourinary and gynecological practice will be mailed on request.

*"Treatment of Acute Anterior Urethritis with Silver Picrate," Knight and Shelanski, AMERICAN JOURNAL OF SYPHILIS, GONORRHEA AND VENEREAL DISEASES, Vol. 23, No. 2, pages 201-206, March, 1939.

JOHN WYETH & BROTHER, INCORPORATED, PHILADELPHIA, PA.


"....many of the patients
changed from one brand of ciga-
rettes to another from time to time
because of the effect on their
throats".

Laryngoscope, Feb. 1935
Vol. XLV, No. 2, 149-154

ON GUIDING PATIENTS IN THEIR CIGARETTE SMOKING

It is certainly worth knowing that tests reported in the same paper showed every case of irritation of the nose and throat due to smoking *cleared completely or definitely improved* when smokers changed to Philip Morris.

Write for reprints of published studies on the comparative irritant properties of cigarettes. Address Philip Morris & Co., Ltd., Inc., 119 Fifth Avenue, New York.

Wagner-George Hospital Bill Analyzed

The following article is an analysis of the Wagner-George Hospital Construction Bill as reported to the Senate. The analysis was prepared by the Bureau of Legal Medicine and Legislation of the American Medical Association and was to appear in an early issue of The Journal of the American Medical Association.

The Senate Committee on Education and Labor reported the Wagner-George hospital construction bill, S. 3230, to the Senate April 30, recommending that all after the enacting clause of the bill be stricken and suggesting substitute provisions drawn partly from the original bill, partly from recommendations made to the committee at the hearing recently conducted on that bill, and partly from Senator Taft's hospital construction plan.

The reported bill proposes a six year program for providing needed hospital facilities. To assist states, counties, health and hospital districts and other political subdivisions of the states to provide better health and medical services through the construction, improvement and enlargement of needed hospitals, especially in rural communities and economically depressed areas, the bill authorizes to be appropriated to the United States Public Health Service (1) $10,000,000 annually for six years, beginning with the fiscal year ending June 30, 1941; (2) annual appropriations of $500,000 for six years for administrative expenses; (3) for each of the five fiscal years beginning with the fiscal year ending June 30, 1947, such sums as may be necessary for hospital maintenance grants under the act, and (4) such sums as may be required by the Public Health Service, after the initial six year period, for necessary expenses in administering such provisions of the act as may then be in operation, as, for example, those relating to grants for maintenance. All amounts appropriated for the fiscal year ending June 30, 1942, and thereafter are to remain available until expended.

Definitions

The term "hospital" as used in the reported bill includes "health, diagnostic and treatment centers the equipment thereof, and facilities relating thereto." The term "hospital project" includes the construction, improvement or enlargement of a hospital. The term "state" includes the territories and insular possessions of the United States.

Two Construction Plans Contemplated

The program contemplates two plans for the construction of hospital projects. Plan I relates to hospital projects to be undertaken under the appropriation of $10,000,000 for the fiscal year ending June 30, 1941. Plan II proposes a different construction program to be carried out from the annual federal appropriations of $10,000,000 for five fiscal years beginning July 1, 1941.

Hospital Construction Plan I

During the fiscal year ending June 30, 1941, the program contemplates that any state, county, health or hospital district or other political subdivision of a state desiring to participate in the benefits of the bill shall apply to the Surgeon General of the Public Health Service, through the state health authority.

Contents of Application.—Each application must contain information necessary (1) to establish the need, in addition to existing public and private hospitals, for the hospital project to which such application relates and (2) to satisfy the Surgeon General that the hospital (a) will be made available, under appropriate conditions and to the extent of the hospital facilities, to every person residing in the territorial area of the applicant for such hospital, (b) will be maintained in good repair and (c) will be utilized in furnishing service of satisfactory quality, in accordance with standards from time to time prescribed by the state and approved by the Surgeon General or, prior to the effective date of such standards, in accordance with standards prescribed by the Surgeon General.

Approval of Application.—This application must first be approved by the National Advisory Hospital Council to be created under the provisions of the bill. If an application has been approved, the Public Works Agency is to be authorized to construct the hospital.

Lease of Hospital.—After completion of a hospital, the Surgeon General is authorized to lease it to the applicant, the title to such leased hospital, to the equipment installed therein by the United States and to the land on which such facilities are located to remain in the United States until divested by conveyance as authorized by the act or as otherwise authorized by law. Any such lease may be terminated only (1) on mutual consent or (2) on conveyance of the hospital to the lessee or (3) if the Surgeon General finds that the lessee has failed substantially to comply with any applicable rule or regulation of the Surgeon General or with any provision in the lease.

Each lease must contain a provision requiring the lessee to yield up the premises and equipment at the termination of the lease in the same condition as the premises and equipment were received, reasonable wear and tear excepted, and may contain such other provisions not inconsistent with the act as are prescribed by the Surgeon General, including requirements with respect to additions to the premises and equipment leased.

Conveyance of Leased Hospital.—On recommendation of the Surgeon General, based on satisfactory operation of a hospital by the lessee, the Federal Security Administrator "may convey such hospital to the lessee thereof, and he shall make such a conveyance in any case in which the Surgeon General finds that any such lessee has operated any such hospital in accordance with the term of his lease and the rules and regulations promulgated under this act for sixty consecutive months."

Operation of Hospital After Lease Cancelled.—The bill does not disclose the manner in which a hospital is to be operated if for any reason a lease is cancelled.

Hospital Construction Plan II

From the appropriations to be made available during the second, third, fourth, fifth and sixth year of the program, it is contemplated that grants will be made to states, counties, health or hospital districts or other political subdivisions of a state, to aid in defraying the cost of constructing needed hospital facilities.

State Plan Required.—No federal money to be made available during these five years, for construction or maintenance purposes, may be used in any state unless that state has submitted to the Surgeon General "state plans for constructing, improving, or enlarging needed hospitals." Such a plan must specify (*a*) the location, character, adequacy and methods of operation of the existing public and private hospitals in the state, (*b*) the type, size and location of any additional hospitals that may be needed and (*c*) such other information with respect to such existing hospital and additional needed hospitals as the Surgeon General may require.

Contents of Application.—In addition to the information required of an applicant under construction plan I, an application under plan II must contain (1) a description of the site for the project, (2) preliminary plans and specifications therefor and (3) assurance that title to the site is, or will be, vested solely in the applicant.

Approval of Application and Determination of Amount of Federal Grant.—After an application under

Fulfilling the essentials
of effective liver therapy—

1cc. CONCENTRATED SOLUTION LIVER EXTRACT
(PARENTERAL)

Lederle

SINCE INDIVIDUAL PATIENTS with Pernicious Anemia vary one from another and from time to time in the amount of liver extract needed, no dogmatic statements can be made as to dosage. Every patient should receive at least enough of the material to maintain a normal blood picture. "Lederle's 1 cc." extract usually meets such requirements when injected at intervals of 7 to 15 or more days.

For the successful treatment of severe neurologic involvement much more extract is indicated than is required for the maintenance of normal blood. An excess of liver is useful to the extent that it may be stored in the body reservoirs and drawn upon as needed.

Neurological complications and relapse need not develop once the patient's cooperation is gained. Lederle's 1 cc. concentrated solution liver extract, containing 15 USP units, aids in gaining this cooperation by

— fewer injections;
— less discomfort;
— less inconvenience.

OBTAINABLE IN PACKAGES OF THREE 1 CC. VIALS.

Literature on Request

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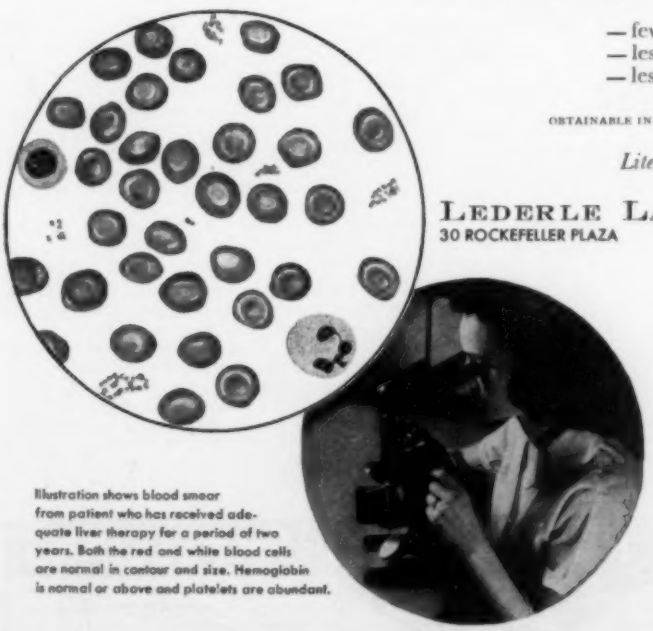

Illustration shows blood smear from patient who has received adequate liver therapy for a period of two years. Both the red and white blood cells are normal in contour and size. Hemoglobin is normal or above and platelets are abundant.

plan II has been approved by the Surgeon General (plan I requires approval of an application by the National Advisory Hospital Council) that official, after proper investigation, will determine the amount of the grant to be made, "which grant shall not be less than twenty-five per centum, nor more than ninety per centum of the cost of such hospital project and equipment therefor," the percentage being determined after taking into consideration, if the applicant is a state, its financial resources as measured by the per capita income accruing to the inhabitants thereof, and, if the applicant is other than a state, such financial resources of the state in which the aplicant is located and the financial condition and ability of the applicant. The applicant must submit satisfactory proof of ability to pay its share of the cost of such project and equipment. Grants are to be made available to an applicant in such installments as are recommended by the Federal Works Administrator, who is to be authorized to make such inspections of the hospital during its construction as he deems necessary.

Title to Hospital Constructed Under Plan II.—It is contemplated that the federal government shall acquire no title to hospitals constructed under plan II.

Grants for Maintenance

With respect to hospital projects constructed under either plan I or plan II, on recommendation of the Surgeon General, the Federal Security Administrator may authorize grants for maintenance during the first five years of operation of the project. In making his recommendation the Surgeon General will, it is contemplated, take into consideration the financial ability of the applicant to maintain the hospital. If a mental hospital, the grant for maintenance may not exceed $150 per bed for the first year, $120 for the second year, $90 for the third year, $60 for the fourth year and $30 for the fifth year. If other than a mental hospital, such grant may not exceed $300 a bed for each of the first two years, $240 for the third year, $180 for the fourth year and $120 for the fifth year.

The Federal Security Administrator may refuse to continue or may reduce maintenance grants if the Surgeon General finds that a hospital project has not been operated in substantial accordance with the rules and regulations promulgated under the act or in accordance with the terms of a lease.

National Advisory Hospital Council

The National Advisory Hospital Council will consist of the Surgeon General of the Public Health Service as chairman and eight members appointed by the Surgeon General with the approval of the Federal Security Administrator, selected from leading medical or scientific authorities who are outstanding in matters pertaining to hospitals and other public services. Each appointed member will receive $25 a day during the time spent on official business and in addition expense allowances.

The Council is to be authorized, in addition to approving applications under plan I, "to advise" the Surgeon General with reference to the carrying out of the provisions of the act, including (1) standards which are necessary to insure the construction of proper buildings and the securing of proper equipment; (2) the method by which hospital personnel may be best trained; (3) standards and principals to be considered in connection with any state plan; (4) standards which are necessary to insure proper administration of the hospitals constructed under the act, and proper care of persons served by the hospitals; (5) standards to be considered in determining the need for hospital projects for which applications are submitted and in determining whether such projects will be adequately maintained and will otherwise fulfill the requirements of the act; (6) procedures for securing reports and for making inspections with reference to professional service in and standards of maintenance of hospitals constructed under the act, and (7) standards for making certain other determinations.

United States Public Health Service

In addition to passing on applications for projects and maintenance grants, the Surgeon General will be authorized, "after consultation with the Council as to general policies," (1) to prescribe standards for training any personnel required in connection with any such hospital project and to assist financially such personnel in securing such required training, subject to the limitation that the total amount of such assistance shall not exceed 2 per cent of the amounts appropriated for construction and maintenance; (2) to cooperate with federal, state and local health and welfare authorities and with professional agencies; (3) to make inspections with respect to professional service in and maintenace of hospitals constructed under the act, and (4) to make such rules and regulations as may be necessary to carry out the purposes of the act, including the prescribing of standards of personnel, maintenance and operation of hospitals constructed under the act and the requiring of reports with respect to such hospitals.

The bill authorizes the appointment of such additional commissioned officers and other personnel in the United States Public Service as may be necessary in carrying out its provisions.

Taft Hospital Building Plan Submitted to the Senate

The Hospital Construction Act of 1940, reported in the Senate in April with favorable recommendations by the Committee on Education and Labor, has been revised from the original Administration draft to conform closely with the substitute plan of Senator Robert A. Taft of Ohio.

The bill as first filed by Senator Wagner called for the construction of a chain of hospitals to be owned by the Federal government, having no relation to existing state and local hospital systems. Criticism has been stated that while the hospitals were to be leased to local authorities, liability to pay maintenance costs would almost certainly have resulted in their reversion to Federal ownership and operation. Furthermore, the hospitals were to be built with WPA labor rather than by contract, critics said.

Senator Taft proposed that Federal money be used as grants to state and local authorities to enable them to extend the state and local hospital systems; and that all new hospitals be owned by states or local governments. He further proposed that construction of these fire proof modern buildings be done under contract rather than with WPA labor at relief wages.

The plan provides that the federal government contribute, for a period of five years and from annual appropriations of $10,000,000, from 40 to 90 per cent of

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the cost of construction and improvement of hospitals the plans for which shall have been approved by a National Hospital Advisory Council to be appointed by the Surgeon General of the Public Health Service with the approval of the Administrator of the Federal Security Agency. The amendment recognizes that operating costs may well be an important consideration by providing for federal contributions for maintenance during the five-year period, such contributions to be at a rate, during the first year, of $300 a bed for general and tuberculosis hospitals and $150 a bed for mental hospitals. During each of the succeeding four years the federal contributions will be at a rate per bed which is 20 per cent less than the rate during the preceding year.

According to the A. M. A. Journal, recognition is given in the amendment to the suggestions made by representatives of the American Medical Association at the hearing on the Wagner-George bill that the National Hospital Advisory Council be authorized to assume more important functions than that bill contemplated. Senator Taft proposes, in effect, that all important steps involved in his plan shall be taken only after approval by the council. Title to the hospital facilities to be constructed and maintained under the provisions of the amendment will lodge in the state or governmental subdivision, not in the federal government as proposed in the Wagner-George bill. Apparently it is contemplated, the Journal says, not only that new hospitals may be built but that additions to existing hospitals may be constructed as well in case this procedure will best serve the needs of a given community.

A. M. A. Approves President's Reorganization Plan No. IV

The activities of the Department of Labor dealing with the welfare of mothers and children should be transferred to the Public Health Service, *The Journal of the American Medical Association* for April 20 says in discussing federal reorganization plans. The editorial says:

"On April 11 President Roosevelt sent to the Congress Reorganization Plan No. IV, which consolidates certain federal agencies and activities. Certain sections of these proposals are of great interest to the medical profession, particularly as they represent an attempt to gather many widely distributed medical functions into a single agency, as recommended by the American Medical Association in its platform. Thus the President said:

"Federal Security Agency: The Federal Security Agency has as its major purposes the promotion of social and economic security, educational opportunity, and the health of the citizens. The functions of St. Elizabeths Hospital, Freedmen's Hospital, Howard University, and Columbia Institution for the Deaf plainly come squarely within these purposes. Consequently, I find it necessary and desirable in pursuance of the objectives of the Reorganization Act to transfer to the Federal Security Agency the responsibilities of the Interior Department relating to these institutions. The work of St. Elizabeths Hospital and Freedmen's Hospital is much more akin to the activities of the Public Health Service in the Federal Security Agency than to those of any other Federal establishment. Similarly, Howard University and Columbia Institution for the Deaf can derive more benefit from association with the Office of Education in the Federal Security Agency than with any other Federal organization.

"I further propose to transfer to the Federal Security Agency the Food and Drug Administration, with the exception of two activities intimately related to the work of the Department of Agriculture. The work of the Food and Drug Administration is unrelated to the basic functions of the Department of Agriculture. There was, however, no other agency to which these functions more appropriately belonged until the Federal Security Agency was created last year. I now believe that the opportunity for the Food and Drug Administration to develop along increasingly constructive lines lies in this new Agency. There is also need for coordination of certain of its functions with those of the Public Health Service. To accomplish these objectives the plan establishes the Administration as a separate unit within the Federal Security Agency.

"In concluding his message the President pointed out that 'the reorganization plans thus far submitted do not exhaust the transfers, consolidations, and abolitions that may be necessary and desirable.' He pointed out also that the act expires on Jan. 20, 1941, and he strongly recommended the reenactment of the Reorganization Act without exemptions so that the structure and management of our government, like the activities and services it performs, might be kept abrest of social and economic change. Perhaps the President has in mind those functions of the Department of Labor particularly concerned with the welfare of mothers and children which belong far more appropriately with the United States Public Health Service."

Industrial Physicians and Surgeons to Meet

The twenty-fifth annual meeting of the American Association of Industrial Physicians and Surgeons, together with the first annual meeting of the American Industrial Hygiene Association, will be held at the Hotel Pennsylvania, New York City, June 4, 5, 6, and 7, 1940.

This will be a four-day convention intensively devoted to the problems of industrial health in all of their various medical, technical, and hygienic phases, with particular stress on prevention and control of occupational hazards.

Important programs have been prepared, and technical and scientific exhibits will be a feature of the convention. The dinner of Thursday evening, June 6, will be the occasion of the presentation of the William S. Knudsen award for the year of 1939-1940.

Lilly Establishes New Fellowship

The committee on the chemistry of proteins of the division of chemistry and chemical technology of the National Research Council has received a grant of $3,600 from Mr. Eli Lilly, Indianapolis, for the establishment of a fellowship in protein chemistry. Isidor Fankuchen, Ph.D., has received the fellowship to continue x-ray research on proteins at the Massachusetts Institute of Technology.

The role which extremes in temperatures play in reducing resistance to colds is explained in *Hygeia, The Health Magazine*, which states: "Overheating causes drying of the mucous membranes of the nose and throat, increasing the ease with which germs may invade it. Chilling may produce congestion in the nose and thus make it easier for infection to take place."

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Guttmann, E. and Sargant, W.: **Observations on Benzedrine**—Brit. Med. J., 1:1013, May 15, 1937.

Nathanson, M. H.: **The Central Action of Beta-aminopropylbenzene (Benzedrine)**—J.A.M.A., 108:528, Feb. 13, 1937.

Myerson, A.: **Effect of Benzedrine Sulfate on Mood and Fatigue in Normal and in Neurotic Persons**—Arch. Neurol. & Psychiat., 36:816, Oct., 1936.

Wilbur, D. L.; MacLean, A. R. and Allen, E. V.: **Clinical Observations on the Effects of Benzedrine Sulphate**—Proc. Staff Meet. Mayo Clin., 12:97, Feb. 17, 1937.

Woolley, L. F.: **The Clinical Effects of Benzedrine Sulphate in Mental Patients with Retarded Activity**—Psychiatric Quart., 12:66, January, 1938.

Davidoff, E. and Reifenstein, E. C., Jr.: **The Stimulating Action of Benzedrine Sulfate**—J.A.M.A., 108:1770, May 22, 1937.

Guttmann, E.: **The Effect of Benzedrine on Depressive States**—J. Ment. Sci., 82:618, Sept., 1936.

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6,043 Physicians Are Added To Roster During 1939

There were 6,043 physicians added in 1939 to the number practicing in the United States, its territories and possessions, the thirty-eighth annual compilation of medical licensure statistics by the Council on Medical Education and Hospitals of the American Medical Association reveals in the report published in the Association's *Journal* for April 27.

Commenting on this figure and the status of medical licensure, *The Journal* says:

"Here is no indication of a dearth of doctors. Quality, however, is more important than quantity and in this respect the situation is far from satisfactory. One hundred and ninety-five graduates of unapproved schools were admitted to practice in thirteen states, Massachusetts, Illinois, Ohio and New York heading the list. In these four states there were licensed, respectively, seventy-nine, fifty one, thirty-six and twelve graduates of unapproved medical schools.

"A still more serious degradation of the standards of medical practice results from the trend in recent years to abolish the restrictions which have heretofore governed the practice of osteopathy. In seven states medical licenses have been issued to 118 osteopaths who are not graduates of any medical school. New Jersey has issued forty-five such licenses and Texas thirty-six. Law making bodies seem to have forgotten that when osteopathy was seeking legal recognition its advocates stoutly maintained that it was a system of healing having nothing to do with medicine and that it would be most unjust to require practioners of osteopathy to undergo the same training and meet the same educational requirements as doctors of medicine.

"Medical journals and the public press have commented on the numbers of medical licenses issued to graduates of schools outside the United States and Canada. Twenty-eight states and the District of Columbia licensed 925 graduates of foreign schools, New York heading the list with 497; New Jersey with eighty-five and Illinois with eighty placed second and third. Some of these 925 foreign graduates are citizens of the United States who studied abroad because they had failed to secure admission to medical schools in this country; the majority are Europeans who sought asylum in the United States."

The compilation is based on official reports from all medical licensing boards of the United States and its territories and possessions. It also contains data obtained from and pertaining to the boards of examiners in the basic sciences, those in medical specialties and the National Board of Medical Examiners.

Regarding the additions to the profession during 1939 the report says the figure represents, in the main, recent graduates and it can be assumed that a great majority of them are in practice. "The number removed by death," the report states, "annually approximates 4,000. It would appear, therefore, that about 2,000 were added to the medical profession in 1939."

During the year there was a total of 9,260 licenses issued, out of which 6,043 were additions to the profession. The largest number added to the profession in any one state was 1,162 in New York. Illinois added 485 and Pennsylvania 476. More than 300 received their first license in California and Ohio while the physician population in Massachusetts, Michigan, Missouri, New Jersey and Texas was increased by between 200 and 300. The increase in Indiana, Maryland, Minnesota, Tennessee, Virginia and Wisconsin was between 100 and 200 while less than 100 were added to the number in thirty-two states, the District of Columbia, the Canal Zone, Hawaii and Puerto Rico.

The increase in 1939 was 210 less than that in 1938 and also less than in any year except 1935 when it was 533 under the 1939 figure.

Grouped geographically, the largest increase in physician population was 1,848 in the Middle Atlantic states. The East North Central group had a total of 1,296, the West North Central 626, South Atlantic 612, the Pacific states 430, New England 426, West South Central states 384, East South Central 296 and the Mountain states 111.

The additions to the profession in 1939 included graduates from sixty-seven approved medical schools of the United States, nine approved schools in Canada, and others. The greatest numbers from any one school were 159 from the University of Illinois College of Medicine, 145 from the University of Pennsylvania School of Medicine and 137 from Northwestern University Medical School.

The efficiency of medical education in approved schools is revealed by the fact that there were 5,379 graduates of approved medical schools in the United States examined, of whom 2.8 per cent failed; 156 graduates of approved Canadian medical schools, 7.1 per cent of whom failed; 1,692 graduates of schools outside of the United States and Canada, principally in Europe, with 50.4 per cent failures; seven who graduated from medical schools now extinct with 28.6 per cent of failures, and 519 from unapproved and osteopathic schools, of whom 47.2 per cent failed. These 519 represented 168 graduates of osteopathic schools, of whom ninety-eight passed and 41.7 per cent failed; 351 graduates of unapproved schools, of whom 176 passed and 175, 49.9 per cent, failed. Graduates of osteopathic schools were examined by the medical boards of eight states, Colorado, Connecticut, Massachusetts, New Hampshire, New Jersey, Oregon, Texas and Wyoming, while graduates of unapproved schools were examined in eight states and Puerto Rico.

Albany Medical College and the University of Buffalo School of Medicine had the highest percentage of failures in the United States, 20.0 and 22.6 per cent, respectively. Fifteen schools in the United States had no failures before medical licensing boards, thirty-seven schools less than 5 per cent, nine between 5 and 10 per cent and six more than 10 per cent. The fifteen with no failures were the Universities of Colorado, Yale, Indiana, Louisiana State, Michigan, Nebraska, Ohio State, Cincinnati, Western Reserve, Oklahoma, Oregon, Pittsburgh, Vanderbilt, Texas and Wisconsin.

The fourteen approved examining boards in medical specialities have awarded certificates to 15,597 physicians, the report shows.

A certificate in the basic sciences is a prerequisite for licensure in fourteen states and the District of Columbia. The subjects included in the examinations are specified by statute and vary in the different states. All boards examine in anatomy, pathology and physiology; thirteen examine in chemistry, eleven in bacteriology, seven in hygiene, two in diagnosis and one in hygiene and public health. In 1939 the fourteen boards examined 1,359 candidates. Of this number, 1,141 were doctors of medicine, 114 osteopaths and twenty-seven chiropractors; for seventy-seven it was not possible to determine what profession they represented, the report says. Of all examined, 18.3 per cent failed. The failures among physicians were 11.2 per cent; osteopaths, 43.9 per cent; chiropractors, 77.8 per cent, and the unclassified, 65 per cent.

"The object of basic science boards is to provide a means of insuring that all candidates seeking the right to care for sick and injured people shall first possess a reasonable knowledge of the sciences fundamental to the healing art," the report states.

A total of 7,437 certificates have been granted, up to and including 1939, by the National Board of Medical Examiners since it was founded twenty-five years ago.

The report points out that its greatest accomplishment has been the acceptance of the certificate as a qualification for licensure by forty-three states, the District of Columbia and four territories.

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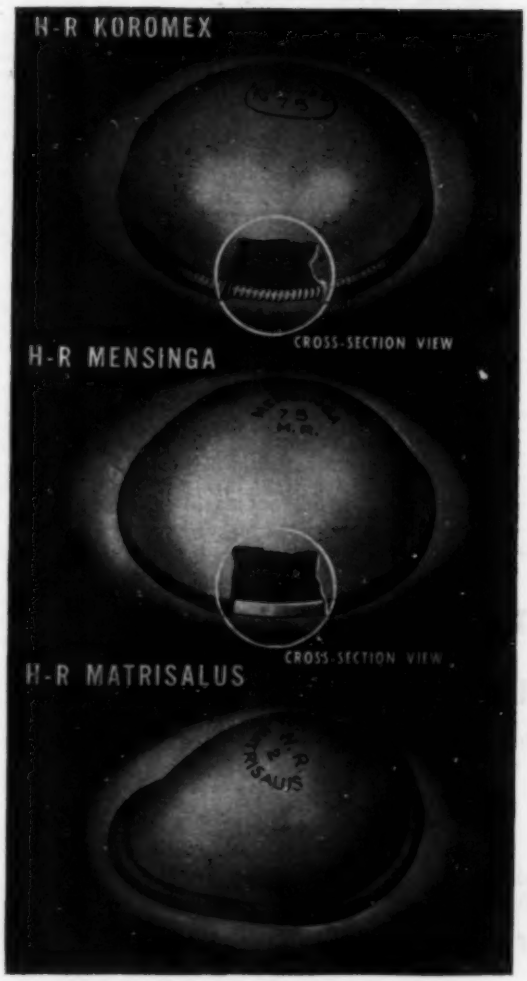

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Early Reservations for A. M. A. Session

Reservations for the annual session of the American Medical Association in New York are beginning to be received in large numbers, advises the Journal of the American Medical Association. From advance information gathered at medical meetings and from members throughout the United States, the attendance at the New York session probably will surpass even the largest attendance ever recorded at a previous convention of the American Medical Association.

The Housing Committee suggests that even though an American Medical Association convention has never been held in a city where so many hotel rooms are available, reservations should be made immediately in order to get accomodations in the hotel desired and at the rate requested.

The low railroad rates as a result of the World's Fair will prove an added attraction and the special American Medical Association days designated by the New York World's Fair on Friday and Saturday, June 14 and 15, are another inducement for attendance at the 1940 convention.

Annual Kober Lecture Given

Dr. William G. MacCallum, Baxley professor of pathology, Johns Hopkins University School of Medicine, Baltimore, delivered the annual Kober lecture at Georgetown University Medical School, Washington, D. C., March 28, on "Pathology of the Parathyroid Glands." He was presented with a certificate and honorarium of $500 provided by the Kober Foundation.

The speaker for this lecture is selected in alternating years by the Medical Society of the District of Columbia, the Association of American Physicians and the Association of Military Surgeons. The lecture commemorates the late Dr. George M. Kober, Washington, and is given on his birthday.

Medical Exports in Recent Months

"Under the international conditions existing at the present time there are few countries in which research, industry and commerce are proceeding normally," *The Journal of the American Medical Association* for April 20 says in commenting on medical exports in recent months.

"Where production is unhampered, business will be greatly accelerated by the concentration of demand to areas functioning in the normal manner. A case in point is the production and export of medicinals by the United States. Long enjoying a favorable position in this field, this country during December 1939 showed an increase of more than 50 per cent in the export of medicinals and pharmaceuticals over that in December 1938, according to the Chemical Division of the United States Bureau of Foreign and Domestic Commerce. An index of the rapid recent acceleration in this trade is provided by the high value of $9,574,000 for the exports during the last four months of 1939, a 65 per cent increase over a similar period of the preceding year. Almost every country and trading area in the world has supported this peak level of foreign demand for American medicinal products (particularly biologic products and unbranded nonproprietaries) since the outbreak of hostilities in Europe."

Competition for Wellcome Medal Announced

The Association of Military Surgeons of the United States announces the annual competition for the Wellcome Medal and prize of $500, established by the late Sir Henry Wellcome for research on subjects helpful to the objects of the Association.

The topic chosen for this year is "Medical and Sanitary Care of the Civilian Population Necessitated by Attacks From Hostile Aircraft." Five copies of the essay must be in the office of the association in Washington, D. C., by August 20. The medal will be awarded at the annual meeting in Cleveland, October 10-12.

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ABSTRACTS : REVIEWS : COMMENTS and CORRESPONDENCE

SURGERY AND GYNECOLOGY

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"The Surgical Treatment of Acute Cholecystitis and Common Duct Obstruction." By Professor Dr. Hans Finsterer, Vienna, Germany. Surgery, Volume 6, Number 4, October, 1939, Page 491.

Coming from a large recognized clinic such as Professor Finsterer's, his ideas in regard to this condition must be given serious consideration, even though one cannot agree with some of his conclusions.

He is an advocate of early operation in acute cholecystitis. In this article he sets forth his arguments in favor of this plan. Many of his ideas are already well known and have been the subject of much discussion in American Surgical circles.

The following rules which he has set down for the treatment of common duct obstruction by stones are of considerable interest:

1. In all cases the diseased gall bladder is removed.

2. If the common duct be occluded by a solitary stone and the papilla be permeable, the common duct is sutured after extraction of the stone and only the abdomen is drained.

3. If the papilla be stenosed and not dilatable, choledochoduodenostomy is applied.

4. If apart from the obturating stone there are additional stones but no infection, the common duct is sutured, "provided I can be sure that all stones have been removed."

5. If in a case of common duct obstruction with fever of short duration purulent bile is found, the common duct is drained after removal of the stone, an anastomosis being difficult and dangerous because of the thin wall of the common duct.

6. If the trouble continues, the choledochoduodenostomy is performed at a second operation.

7. With multiple stones in the common duct, purulent cholangitis, relative stenosis of the papilla by cicatrices or chronic pancreatitis, a side-to-side anastomosis 2 cm. long is made between the common duct and the duodenum. In these cases the abdomen is always drained.

LeRoy D. Long

"The Use of 2-Methyl-1, 4-Naphthoquinone (A Synthetic Vitamin K Substitute) in the Treatment of Prothrombin Deficiency in Patients." By J. E. Rhoads, M.D., and M. T. Fliegelman, M.D. The American Medical Association Journal, February 3, 1940. Vol. 114, No. 5, Page 400.

The isolation of vitamin K in pure form has led to the discovery that several simpler naphthoquinones share the antihemorrhagic properties of vitamin K. The most potent of the synthetic preparations so far assayed is 2-methyl 1, 4-naphthoquinone.

Ten patients with demonstrated prothrombin deficiencies were treated with 2-methyl-1, 4 naphthoquinone. They all received bile salts, either in the form of iron bile salts (Lilly) or of sodium deoxycholate (Riedel-De-Haen).

Three of the patients in whom a satisfactory response was obtained had failed to respond satisfactorily to various forms of Vitamin K. All but one of the ten patients responded satisfactorily to doses of from one to four milligrams a day orally.

In three cases hemorrhagic phenomena occurred before the first dose was given. In all these the hemorrhage was controlled.

2-Methyl-1, 4, naphthoquinone appears to be the most potent agent for the treatment of prothrombin deficiency so far employed clinically.

No toxic effects were observed in this group of patients.

As the absolute amount of each of these substances needed for the formation of prothrombin is very small, it is probable that cost, ease of administration, uniformity of results and absence of toxic effects will ultimately determine which of them will be most generally used.

LeRoy D. Long.

"Clinical Aspects of Protruded Intervertebral Disk." By Harry B. Macey, M.D., Rochester, Minnesota. Archives of Surgery, Volume 40, Number 3, March, 1940, Page 433.

The credit for establishing posterior protrusion of the intervertebral disk as an entity is given to Mixter and Barr. The initial report of these authors was published in the New England Journal of Medicine on August 2, 1934.

The author of this article does not wish to imply that all posterior protrusions produce symptoms, but he believes that a protrusion of sufficient size, "advantageously placed" may produce pathologic changes in the nerve roots or the cauda equina sufficient to convince the most skeptical of its clinical significance."

The conclusions of the author are based upon the investigation of a group of patients treated at the Mayo Clinic in 1936 and 1937. When operation appeared to be advisable, it was done by the neurosurgical staff.

Speaking of the anatomy and mechanism of production, the reader is reminded that the intervertebral disk, or fibrocartilage, is composed of the annulus fibrosus and the nucleus pulposus. "The annulus fibrosus is composed of laminas of fibrous tissue and fibrocartilage and is so placed at the anterior and posterior intervertebral spaces as to confine the nucleus pulposus between the vertebral bodies. The nucleus pulposus, a soft, elastic mass of fibrous tissue, is confined superiorly and inferiorly by the cartilaginous plate covering the inferior and superior portions of the vertebral bodies anteriorly by the annulus fibrosus. It is confined under pressure and acts in the capacity of a shock absorber, or cushion, for the vertebral bodies."

The nucleus pulposus, normally circular in shape, changes shape under pressure, "and there is a corresponding change of the annulus fibrosus to compensate for the changing nucleus." At the same time there is a change in the position of the bodies of the vertebrae, with disturbance of the equalization of pressure. When there is pressure enough upon the annulus fibrosus to produce great stretching and rupture there must be application of force over the spine with the spine in flexion.

In connection with this mechanism, attention is directed to simultaneous stretching or damage of the posterior longitudinal ligament. The rupture is usually on one side but may occur in the midline.

Continuing to discuss the clinical-pathological phenomena, the author says, "The pathologic picture of a pos-

teriorly protruded disk is that of nerve compression." Parenthetically, he explains that by nerve compression he means that the protrusion has compressed a root laterally and posteriorly against the pedicle of the vertebra and on the ligamentum flavum, from a ruptured annulus fibrosus, an extruded nucleus, or a combination of the two. Pathologic examinations in 100 cases forming the basis of the study reported showed that the extruded material had the characteristics of fibrocartilage as a predominating feature. At operation the pathological appearance of the specimen was that of a firm, hard protrusion at the posterolateral intervertebral space. In some cases it appeared to be firmly adherent, and made it necessary to exercise it, even after attempted relaxation by section of the posterior longitudinal ligament.

"There may also occur, though rarely, extrusion into the canal of several fragments, which are fibrous particles of the nucleus pulposus. It would appear from the anatomic and pathologic pictures that the presenting tumefaction in this syndrome is due to protrusion of the necleus covered by the annulus fibrosus which has undergone fibrous changes. There may be an occasional case in which fibrous fragments of the dislodged nucleus becomes so placed as to produce nerve compression."

In connection with the clinical history, low backache was practically always present, either continuously, or intermittently. In other cases there was pain in the distribution of the great sciatic nerve. In still other patients there was a combination of low backache and sciatic pain.

Paresthesia in the distribution of the lower lumbar and the sciatic nerve was a frequent complaint.

It was observed that the patient usually had pain only when the body or legs were moved, or when there were spasmotic efforts like those in coughing, sneezing, or attempted activity.

The very important and remarkable statement is made that "The injury is frequently trivial and seemingly insufficient to cause an acute rupture of the annulus fibrosus."

"From the pathologic anatomy one must conclude that the protrusion results from an injury or injuries or possibly from disease, although so far as I know the latter has not been reported. The impression one gets in reviewing the cases is that injury is the basis of all posterior protrusions but that the degree of the injury or multiple injuries determines the clinical history and the clinical course of the syndrome."

On physical examination, in 50 of the group of 100 there was unilateral limited "straight leg raising." In 24 patients there was bilateral limited "straight leg raising," and in 26 patients "straight leg raising" was considered normal. In 17 of the patients there was atrophy of either the buttock or the extremity or both.

On inspection of the body, there was list to the unaffected side in the more acute cases. Out of the 100 cases investigated, there was list to the unaffected side in 33.

In 50 per cent of the patients there was tenderness over the lumbosacral joint, and in 80 per cent of the patients examined there was definite limitation of motion, particularly in flexion of the spinal column.

"Of 98 cases in which fluroscopic examination with radiopaque oil was done, there were 93 in which a positive defect was found, 4 in which the procedure was a failure and one in which a protruded disk was found at the interspace between the fourth and fifth lumbar vertebrae at operation after the results of roentgen examination had been reported as negative."

In referring to the report of Camp that by the use of radiopaque oil accurate diagnoses have been made in 92.3 per cent of 210 cases observed at the Mayo Clinic, it is remarked that air studies are now mostly employed because of a radiculitis that sometimes follows the introduction of oil.

The larger proportion of the protrusions occurred at the fourth and fifth lumbar inter-space. There were eight at the third and fourth lumbar interspace and one at the second and third lumbar interspace. There were multiple protrusions in the cases of four patients. "Of this group there were 28 midline or bilateral protrusions of the disks. Each of the remaining 72 protrusions was unilateral."

There was a diminished achilles tendon reflex in the majority of the patients but the author does not believe that the finding of a diminished achilles tendon reflex is a uniform finding.

Treatment consists of laminectomy and removal of the ligamentum flavum and the disk, the articular facets being preserved.

Finally, it is wise to have an orthopedist as a consultant.

Comments:—One most striking characteristic in connection with pain associated with protruded intervertebral disks is that the patient has pain only when there is activity on the part of the body or extremities. We now have a patient under observation who illustrates this characteristic which has been mentioned by the author of the article. This patient says that he stays in bed most of the time because he is afraid to move. If he lies down and is perfectly quiet he does not have pain, but if there is the least movement of the body there is low back pain of a most annoying character. When we examined him we found that he had been taking large doses of phenobarbital at night. On questioning him it was learned that he was able to sleep when he did not have pain, but that if he did not have something to make him sleep he would involuntarily move the body and the pain would be so excruciating that he was not able to rest. He was in our clinic one day, and for a short time was left in a room alone. He appeared to be very tired. When he was seen after a short space of time he was lying down on the floor. His explanation was that that was the only way he was able to secure relief from pain, and since there was no arrangement for examination in the particular room where he was left — no examining chair — no tables — he did the next best thing, which was to lie down on the floor.

Some of these patients have pain definitely localized in the back, usually much more on one side. Aside from weakness and paresthesia, they may not have suggestive complaints with reference to the leg. In this same journal carrying the article of Dr. Macey, there is a good explanation of that by Spurling and Grantham, of Louisville, Kentucky. They say, "With tearing of the annulus fibrosus and the subsequent inflammatory reaction therefrom, the sensory nerve endings, with which the structure is richly supplied, are stimulated; hence the pain in the back. The pain remains localized to the back unless the tear is sufficiently large to permit extrusion of the nucleus pulposus or detached portions of the annulus fibrosus into the spinal canal."

Finally, the implied warning against the indiscriminate intra-spinal injection of radiopaque oil should receive the most careful consideration, because the radiculitis which sometimes follows its employment may be not only disturbing, but may completely incapacitate the patient.

LeRoy Long, Sr.

"Helpful Words From Older Doctors." By W. A. Newman Dorland, M.D., F.A.C.S., Chicago, Illinois (By Invitation). Clinical Medicine and Surgery, March, 1940. Volume 47, No. 3, Page 91.

This is the first of a series of interesting and practical articles under the heading listed above.

All of the articles in this group (some eight or ten) are good, but in this abstract my remarks will be confined to the article of Dr. Dorland for three reasons: 1. He is a distinguished member of the medical profession. 2. He is a medical lexicographer of wide renown. 3. He has been in the active practice of medicine for fifty-four years. With these qualifications as a background, any statement from him should receive careful attention.

His first statement has been made repeatedly, but

regardless of its repetition it has never been made by one more able to speak authoritatively than this distinguished member of the medical profession. Briefly, the statement is that when a young doctor leaves hospital he is just getting ready to learn how to practice medicine. This emphasizes the necessity of preparation in fundamental knowledge to the end that he will be able to make practical application of such knowledge because "he soon learns that he does not know it all, as he is so apt to imagine." It is indicated that even those who are sincere and earnest are appalled at their ignorance of many matters which are essential to true success. "True, he has acquired a smattering of experience in his dealings with the hospital patients under the tutelage of the visiting staff; but now that he is on his own, with the entire responsibility resting upon his shoulders, it is quite another matter."

It is advised that the young doctor of medicine acquaint himself with as much practical information as possible, and it is indicated that the most valuable and usable material is often found in the smaller medical journals "which are mainly devoted to the clinical practice of medicine."

"It is not the ultra-scientific papers, interesting and instructive as they are, that are most valuable to the young doctor." It is advised that such papers should be read and studied in leisure time, "but clinical reports and therapeutic articles yield for him the larger quantity of useful pabulum." The young doctor is advised to begin, early in his career, the collecting and grouping of current medical literature, such as reprints, and to systematically build up a usable library.

While engaged in the practical every-day pursuits, fundamental things, such as autopsy findings, should not be neglected. In this connection, the following statement is made: "Pathology, even more than clinical experience, is the true basis of a successful medical career."

Membership in medical societies, and the discussion of medical problems in such societies are emphasized.

"If possible, he should associate himself with the professors in their clinics, in order to learn the prevalent methods of treatment and the points of differential diagnosis. Thereby he will keep abreast of the times."

Specialization should be approached with great deliberation. "Many a truly good man has been handicapped by entering a specialty before he is really prepared for it."

Here is a most practical statement: "He (the young doctor) must remember that the various systems of the body are not packed together inside of the skin as distinct and sharply defined organs. On the contrary, they are overlapping and intimately associated one with the other, activating and influencing each other to a remarkable degree. It is the knowledge of this fact which will often clear up an obscure clinical condition; and it is just here that brilliant diagnoses are made, which the man not informed of the interrelation of the systems will be unable to make, save by mere chance."

LeRoy Long, Sr.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M. D.
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"Sala (Palermo).—Ocular Changes Due to Stovarsol." (Alterazioni oculari da stovarsol sodico). Annal. di Ottal., March, 1939. Abstract published in the British Journal of Ophthalmology, January, 1940.

All arsenic compounds are more or less dangerous to the eyes; it has been stated that stovarsol is less dangerous than others and on this account it has been pronounced to be the drug to be selected when it is desired to give arsenic. Some disasters have been recorded even with this compound. Its composition is acetyl-amino-oxyphenylarsenic acid, and it is pentavalent.

Sala wished to examine the toxicity of stovarsol and chose for experiment, the sodium salt; he injected a solution intravenously into rabbits, in some cases with the addition of some quantity of alcohol. After some months of treatment, the animals were killed and the eyes and optic nerves examined; he found evidence of atrophic degeneration of the retina and also of the optic nerve. He concluded that the prolonged administration of stovarsol is not devoid of risk, especially when the patient is in poor condition.

"Acute Osteomyelitis of the Superior Maxilla in Young Infants." N. Asherton, London. The Journal of Laryngology and Otology, December, 1939.

Four such cases are reported in this article. In spite of the relative rarity of this condition it can be readily identified. It is caused by a staphylococcic infection of the socket of the unerupted first deciduous molar tooth, and the adjacent part of the anterior surface of the superior maxilla. In the four cases reported the involvement started as above stated and spread rapidly in all directions. The lachrymal apparatus is usually not involved. If the case is late when seen or surgical intervention is not made soon enough, the result is multiple fistulae. Sequestra are extruded spontaneously and the fistula may persist until removed by operation.

This is a rare condition, there being only about seventy cases reported in the literature. The source of the infection is not definitely known. Such sources as birth injuries, infection from the attendant nurse or doctor, or infection from other parts of the body (umbilicus) which already have a staphylococcic foci are mentioned. The socket of the unerupted tooth is actually larger than the maxillary antrum in the young infant. The majority of the cases occur from the time of birth up to twelve weeks; rarely in infants eighteen months of age.

The onset is sudden. There is temperature, lids swollen and odematous, eyes are swollen closed, proptosis, ophthalmoplegia, unilateral purulent nasal discharge, induration and swelling of the cheek, palatal swelling in juxtaposition with the alveolus, severe constitutional signs and symptoms. The x-ray at this stage is usually negative. Later after sequestra formation x-ray shows nicely. Staphylococcus usually can be cultured from the nasal dicharge. The acute stage usually lasts about ten days. After the rupture or drainage of the pus the temperature drops and the patient then enters the chronic or indolent stage of fistula formation and the sequestration of dead bone. This stage may last for months if adequate surgical intervention is not instituted.

The characteristic features in the diagnosis are: Swelling of the cheek; swelling of the canine fossa; swelling of the hard palate; fistula followed by sequestra formation; and presence of staphylococcus in the discharge. These are similar signs to those which are produced by an orbital cellulitis secondary to acute antro-ethmoidal infection in infants. However, the latter condition is apt to occur in older infants and children. There is a table of eleven differential points of diagnosis of the two above mentioned conditions. Of the four cases reported by the author, one patient died, giving a mortality rate of 25 per cent. Others report this as about the correct percentage of mortality.

The treatment is immediate operation by an external route. The operation is outlined during the acute and also during the chronic or indolent stage. This is given in much detail. The cases are reported in detail from the time of the first examination to culmination of the course of the disease. Beautiful and instructive illustrations accompany the article.

"The Status of Retrobulbar Neuritis in Paranasal Sinus Disease." James B. Costen, M.D., St. Louis, Mo. The Southern Medical Journal, February, 1940.

According to the author, the optic nerve in 75 per cent of the cases passes through the upper and outer

anterior part of the sphenoid sinus. The bone, if any, protecting the nerve at this point is very thin. The nerve may also be poorly protected in the ethmoid region. It is easy to see how inflammation and pressure and infection may directly affect the optic nerve due to its placement anatomically. If there is a resection of the posterior sinuses and the eye lesion recovers rapidly, then the author assumes that the process is one of (a) drainage of infectious material away from intimate contact with the optic nerve; (b) decompression of the nerve by free incision of many adjacent blood and lymphatic vessels; (c) relief from direct pressure by engorged membranes and by another reasoning; (d) production of hyperemia which restores the blood supply to the nerve which has been lost in the pressure effects from swelling within the bony canal or in the thrombosis of the small vessels supplying it.

This is quite a controversial subject, both as to a correct diagnosis of retrobulbar neuritis and as to whether or not surgical intervention is of value. From 1908 to 1915 many cases were reported in the literature giving the sinuses as etiological factors in retrobulbar neuritis. There were mentioned other toxic causes such as tobacco, alcohol, chemicals, and such constitutional diseases as diabetes, lues, rheumatism, pellagra and tumor. A disease that is hard to eliminate from the differential diagnosis is that of multiple sclerosis. Not infrequently cases reported as retrobulbar neuritis have been confirmed much later as multiple sclerosis. It has been stated by some authorities that 90 per cent of the cases of retrobulbar neuritis will recover spontaneously. In 1927 Oliver and Crowe reported ten cases of retrobulbar neuritis in which tissue removed from the posterior ethmoid cells showed myxomatous degeneration and cellular infiltration of the mucous membrane. McMahon described similar changes occurring in sphenoethmoid sinusitis.

Benedict, in 1933, analyzed 225 cases of retrobulbar neuritis examined in the Mayo clinic: 155 were found to be due to multiple sclerosis and the remainder to various toxic effects, with only one case claimed by sinus disease. In 500 cases of proven multiple sclerosis, 60 per cent had had intranasal operations performed elsewhere. Lillie, in 1934, reviewed the same series of cases, and did not consider the sinus infection as an important etiologic factor.

The author reports thirteen patients whose visual disturbances were suspected to be due to absorption from toxic foci about the nasal sinuses. The author says: "The most important conclusion which may be drawn simply indicates the preponderance of lesion of the retina and choroid which respond to surgical drainage of the sinuses rather than retrobulbar neuritis." He suggests that the terminology as applied to the eye lesions in connection with nasal infections and nasal surgery is probably loosely applied.

"Nasal Sinusitis: Evaluation of Therapeutic Procedures With Special Reference To Conservative Management." A. R. Hollender, M.D., F.A.C.S., Miami Beach, Florida. The Eye, Ear, Nose and Throat Monthly, February, 1940.

The author chooses this difficult question evidently with some misgivings, for he states: "A recent symposium on nasal sinus disease brought out a diversity of opinions which exists today as it did twenty-five years ago." As in the past the swing of the pendulum indicated surgical procedures almost universally, now more conservative methods are being advocated and used, just as successfully. The meaning of the word, conservative, as the author uses it, is discussed. He cites the fact that he would term an intranasal operation on the maxillary sinus, conservative treatment, under certain circumstances. More knowledge as regards nasal and sinus physiology have helped to change the trend of treatment as well as the unsuccessful attempts at a cure by means of surgery of one type or another.

The postural instillation of isotonic solutions in the nose is foremost among therapeutic innovations. Hays advocates the suction-douche method of treatment. Fox, Harned and Peluse used the irrigation with posterior suction with gratifying results. The Dowling tampons are still used by some in acute and chronic sinus disease. Infra-red and ultraviolet are used with varied opinions as to the result obtained. As to short wave diathermy the author's opinion is that: 1. Short wave diathermy is not in itself sufficiently effective in acute sinusitis to be employed to the exclusion of other recognized therapeutic procedures. 2. It is not a curative method of treatment of chronic sinusitis, when used either alone or in combination with other nonsurgical measures. 3. It is an effective aid to indicated accepted procedures in acute sinusitis, hastening the abatement of symptoms and shortening the course of the disease.

Vaughn claims that many so called sinus cases are really allergic. It is reasonable to suppose that when examination shows a pale, boggy and swollen mucous membrane in the nasal passage that a similar condition exists in the sinuses themselves. Intranasal treatment will not relieve the boggy membrane in the sinus. This type of case requires a great deal of effort and time if the best results are to be obtained and useless surgery avoided. Bloom reports good results with the use of potassium in allergic sinusitis. The endocrine basis for allergy cannot be ignored.

If there is a vitamin deficiency upper respiratory infections are more liable to occur. The use of vitamins indiscriminately is of course fallicous. It would seem from the present state of knowledge that vitamins A and C are the most closely related to the development and maintenance of resistance to infection.

Irrigation of the antrum is of great value and should be used when indicated, but the continuous use of aqueous nasal irrigation produces a deleterious effect by water logging of the membranes which results in constant, excessive, mucopurulent discharge.

The author does not believe that surgery must be excluded for if there is a polypoid mass in the sinus, nothing but surgery will effect cure. It is the borderline case that brings so much diversity of opinion. A dogmatic attitude should not be taken as regards the treatment of sinusitis. Individualization of treatment gives the most successful results. Consitutional treatment is important in an acute sinus infection: — rest in bed — increased elimination — alkalization — large fluid intake—foreign protein therapy—mild anodynes of sedatives. The maintenance of ventilation and adequate drainage are of prime importance. Change of climate is sometimes helpful but it is erroneous to believe that change of climate in itself will effect a cure.

The author's conclusions are: "The introduction of several new non-surgical procedures and their successful utilization in the treament of nasal sinusitis have changed our views concerning sinus therapy. As the relationship of allergy to sinus disease is being more thoroughly appreciated, the trend toward conservative management is constantly increasing. Surgery in nasal sinus disease is an issue only in borderline cases. The scientific utilization of non-surgical procedures seems proper so long as the situation is not critical and no hazard is added by the time element required. When, however, the indications are absolute, surgery cannot be avoided, and no effort should be made to replace it by inadequate therapeutic substitutes."

PLASTIC SURGERY

Edited by George H. Kimball, M. D., F. A. C. S.
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"Paralysis of the Lower Lid and Scleral Scars and Grafts." Vilray P. Blair, M.D., F.A.C.S., & Louis T. Byars, M.D., St. Louis, Mo. S. G. & O. February 15, 1940.

PARALYSIS OF THE LOWER LID

Paralysis or destruction of the muscles of the lower

lid presents a much more distressing situation than a similar condition in the upper lid. Elevation of the latter may be accompanied by overactivity of the levator muscles. As long as the tone of the lower lid is present loss of muscular activity is practically unnoticeable, especially if there is any resistance of involuntary lid movement. But when the tone is lost the paralyzed lid begins to sag, the lid loses contact with the globe and there is distinct discomfort. When the upper lid is flaccid there is no tendency for the lid to separate from the globe as both gravity and a potential vacuum act to maintain contact. The lower lid however has an early separation of the lid and the eyeball since gravity, which is a help in the upper lid, will pull the lower lid away. The immediate reaction to even a slight separation of the tarsus is a sense of discomfort which may develop into a distinct irritation or inflammation when particles of dirt or grit accumulate in the space formed between the globe and the lid. Excessive tearing also may result.

The most common cause of lid paralysis is total or partial loss in continuity of the seventh nerve while in some cases it is due to a local destruction of the muscle, a binding scar or a depressed lower orbital border.

Reconstruction of these cases must be highly individualized.

In this report several plans of repair are given with adequate illustrations. These include external canthotomy, living fascial slings, rebuilding with pedicle grafts and the insertion of autogenous cartilage grafts.

SCLERAL SCARS AND GRAFTS

Scars within the conjunctival sac may compromise normal vision by limiting proper lid clearance or free movements of the globe, and in addition may cause actual discomfort. These are most commonly caused by chemical burns, lye in children, and acids in adults. Trauma and infection will account for a few. For the surgical corrections of the symptoms the scar must be divided or removed and the loss of conjunctiva must be replaced, either by shifting of the conjunctiva which is present or by free grafts. No mucous membrane grafts were used by these authors.

Procedure used here is careful division of scar tissue with very little removal of scar especially from the sclera using extreme care not to perforate the eyeball. The material used for replacement was thin split grafts. The technique used by the authors is that of a stint or inlay graft using a soft paraffin as a form. Paraffin was found to be the best in these cases because of its resilliancy and lack of maceration as occurred in cotton forms. The most important part in this procedure is to use care in protection of the cornea seeing that it is not scratched nor touched with dry cotton or the finger tips.

Post-operative care is essential. The eye must be dressed with moderate but not severe pressure and the cornea protected by a heavy layer of vaseline. For a few days both eyes must be covered to limit movement. Barring indications to the contrary the first dressing is left undisturbed for three to four days, but if real pain develops, the dressing should be removed for inspection.

This article reports four cases which have been successfully treated in this manner; however, they report some complications from corneal ulcers which they feel can be avoided in future work.

Comment: This is an exceedingly interesting article in a very important phase of reconstructive work. Frequently severe destructive lesions of the eyelids are encountered. The lesions should be reconstructed in order for the patient to continue his normal occupation. Scleral scarring, symblepharon, may cause severe handicap and can be corrected by release of the scar and reconstruction of the defect with split grafts.

The technique is tedious and the entire operation should be planned step by step before it is begun.

"Construction of Artificial Vagina." Buford Word, M.D., Birmingham, Ala. Southern Medical Journal, March, 1940.

Doctor Word discusses first the embryological development of the vagina and gives the various theories of origin. It is stated that the exact embryological origin is confusing but that the origin of the vagina is probably from the mesoderm.

The operative procedures which have been devised to correct this anomaly are traced in the various methods and discussed breifly. The Wharton operation is discussed a little more fully. In this operation after the tissue planes are dissected and a bed is made for the constructed organ a Balsam wood prosthesis is used to maintain the cavity.

The author has modified this procedure in that he uses a silver plated prothesis constructed from the obturator of an anoscope. The obturator used in these cases is one and one-half inches in diameter and four and one-half inches long. This is electroplated with pure silver 3/1000 inch in thickness. In addition to the change in this instrument the author plants 5 or 6 pinch grafts onto the head of the instrument so that the grafts would act as epithelial seedlings in the bottom of the cavity and grow out to meet the epithelium growing in. He states he did this to shorten convalescence. The authors comment in these procedures is to the effect that the embryological origin of the vagina is not definitely known; however, the authorities agree that it comes from the mesoderm or entoderm or both but not from the ectoderm.

The Wharton operation constructs a covering lined with this type of embryological tissue. The epithelium seedlings of mucous membrane transplanted are the same embryology as normal vagina. The author states that the organ cannot function properly with any other type of lining.

The author in conclusion recommends that the Wharton operation be used and that a silver plated prothesis and pinch grafts be used and that a silver plated prothesis and pinch grafts are a helpful addition in this operation.

Comment: In selected cases of atresia of the vagina operative relief is duly indicated. This is a simple procedure and has been suucessful in these men's hands. It is certainly to be desired to some of the more extensive plans which have been devised for this operation.

CARDIOLOGY

Edited by F. Redding Hood, M. D.
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"Some Different Types of Essential Hypertension: Their Course and Prognosis." Modern Concepts of Cardiovascular Disease. March, 1940. Norman M. Keith, M.D., Henry P. Wagener, M.D., Nelson W. Barker, M.D., Rochester, Minnesota.

To avoid confusing descriptive terms, the groups have been given numbers. We have considered the usual benign cases as belonging to group 1; those of more marked hypertension, without retinitis, presenting few untoward symptoms as belonging to group 2; those of mild vasospastic retinitis as belonging to group 3, and those revealing the so-called malignant hypertension syndrome as belonging to group 4.

GROUPS

Diffuse arteriolar disease with hypertension, Group 1. The hypertension can be of long duration without causing symptoms and without impairing general health. Cardiac and renal functions continue to be adequate and changes in the retinal vessels are minimal. Albuminuria may be of a slight degree or may be absent and, in spite of the gradual development of hypertrophy of the heart, electrocardiologic examinations may give evidence

of normal findings for many years. The hypertension as a rule does not rise to extreme heights, and among many individuals falls to normal levels during sleep. With moderate protection of the vascular system, the prognosis is usually good.

Diffuse arteriolar disease with hypertension, Group 2.

Patients of this group have a higher and more sustained hypertension than those of group 1. They may complain of being more nervous than formerly, but their general health is good and their cardiac and renal functions are satisfactory. The changes in the retinal vessels are more marked than in group 1, but retinitis is not present. In a study of these patients, the impression is obtained that the disease is more progressive than in cases belonging to group 1.

Diffuse arteriolar disease with hypertension, Group 3.

In this group, the hypertension is often high and sustained. On palpation, diffuse changes in the arteries usually can be demonstrated such as thickened, rubber-like radial, brachial, superficial temporal, posterior tibial, and dorsalis pedis arteries. Although cardiac and renal functions may be adequate, sometimes there are minor alterations in function as indicated by dyspnea on exertion, characteristic changes in the electrocardiogram and nocturia. Nervousness, headache, and vertigo are often annoying symptoms, and visual disturbances may occur. Albuminuria and microscopic hematuria may be present. An important criterion is the presence of angiospastic retinitis, together with definite sclerotic changes in the arterioles, but edema of the disks is not present.

It is of great interest that, even in cases of group 3, there may be a remission in the activity of the pathological process. The patient feels better and stronger and headaches or vertigo may disappear. There is evidence in the retina of previously active retinitis and some small arterioles may even become obliterated.

Diffuse arteriolar disease with hypertension, Group 4.

All observers are agreed that patients belonging to this group are in a very serious condition. The characteristic symptoms are nervousness, asthenia, loss of weight, headache, visual disturbances, dyspnea on exertion, and nocturia. Also, there may be obvious neurologic lesions. The objective findings are persistently elevated blood pressure, palpable diffuse arterial thickening of the peripheral arteries, and retinal changes. The important retinal alteration is edema of the disks. There is also marked spastic and organic narrowing of the arterioles with diffuse retinitis. Albuminuria, cylindruria, and erythrocytes are usually present. Cardiac and renal functions may be adequate but, sooner or later, they become impaired. Associated with the terminal picture, there may be failure of the functions of the brain, heart, and kidney simultaneously. This fact suggests widespread anoxemia owing to decreasing arteriolar blood supply. We have observed a few cases of group 4 in which the course was very rapid. The significant symptoms were sudden severe headaches, gross hematuria and pains in the muscles, accompanied by a persistently high blood pressure, marked narrowing of the retinal arterioles without apparent sclerosis and absence of distinct changes in the arterioles of muscles.

To distinguish clinically between the four groups usually is not difficult. Some patients may have to be observed over several months to determine whether they belong to group 1 or 2. Because the arterioles throughout the organs of the bodies seem to be the chief point of attack and can be visualized readily only in the retina, the findings obtained on ophthalmoscopic examination are very important.

PROGNOSIS

The outlook for patients who have essential hypertension affords a striking example of the variableness of processes of the disease.

The prognosis for cases of group 3 and especially, for cases of group 4 is very serious. Because many more males than females belong to these two groups, the death rate is much higher among males than among females. A death rate, within one year, of 35 per cent, in cases of group 3, and 79 per cent in cases belonging to group 4, is in distinct contrast with that of 10 to 12 per cent in groups 1 and 2. The mortality rate in cases of group 4 approaches that found in certain forms of cancer.

COMMENT

In the present attempt to group cases of essential hypertension clinically, we realize that not all cases fall into one of the four groups mentioned. There are many patients who have this condition who have, in addition to arteriolar dysfunction, diffuse arteriosclerosis, more especially of the aorta and of the coronary and cerebral arteries. Atherosclerosis of these arteries may be the determining factor as to course and prognosis. With more knowledge relative to the occurence of atherosclerosis in such vital internal arteries and with the aid of more accurate diagnostic methods, these cases might be grouped in a much more satisfactory manner than is possible at present.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D., F. A. C. S.
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In the February 15, 1940 issue of the Journal of Surgery, Gynecology and Obstetrics there is a very excellent symposium on the treatment of fractures and other trauma. A careful review of each of these articles would be in order for this Journal. However, this discussion will be limited to a few articles; one of which reemphasizes a common problem that faces all of us; that of primary and secondary tendon suture, a second a reasonably new method of the treatment of certain fractures of the upper end of the humerus.

"Primary and Secondary Tendon Suture; a Discussion of the Significance of Technique in Tendon Surgery." Michael L. Mason, Surg., Gyn. & Obst. Feb. 15, 1940, Vol. 70 No. 2A.

In the treatment of tendon defects, severance of tendons, aside from the obvious importance of sterile or aseptic technique, we have to develop the patience to work slowly and carefully so that our technique is also "atraumatic." Dr. Mason discusses instruments for use in tendon repair which are primarily small instruments without rough teeth, the use of fine suture material and fine needles. The skin is prepared by scrubbing with soap and water. The skin incisions of choice for work in the hand are discussed in some detail. Space does not permit detailed outline of these, but primarily let it be said that they should be made so that the resulting scar does not contract and leave loss of function. Incision must be made to avoid the midline of fingers, the wrist and must not run at right angle to flexure creases.

Important details during the operation, after preparation and the proper skin incision, include absolute hemostasis and in this the vessels themselves must be clamped and not the surrounding tissues. There must be no tissue devitalization whatsoever. The tendons must be accurately approximated and held there by appropriate sutures. Closure of the wound should be done very carefully. Special attention should be given the details of dressing the wound and to the postoperative care. Thorough knowledge of the manner of tendon healing is important.

Primary repair is always advisable if the surgeon is fortunate enough to secure the wound early enough, and if he can be certain that it is clean. If not, secondary repair may be undertaken as soon as the wound is free of bacterial contaminants, and the tissues of the hand have regained normal consistency.

"Treatment of Fractures of the Shaft of the Humerus By Hanging Cast." John A. Caldwell, Surg. Gyn. & Obst. Feb. 15, 1940, Vol. 70 2A.

Treatment of fractures of the humerus presents cer-

tain special elements due to the particular location and function of this bone. "(1) It is the most freely movable long bone. Articulated above with the scapula by a ball and socket joint, the humerus has movement in all directions, and its movement can be amplified by movement of the scapula. (2) Its entire function is that of a lever, so that nearly all stress is in tension or at an angle to its long axis. The bone has to stand comparatively little stress in compression. (3) When at rest while the person is standing, the axis of the bone hangs vertically and is influenced by gravity alone." Thus we can depart from common lines of treatment of fractures of long bones and utilize a special method.

In absolute fixation of the humerus the disadvantages of the spica or the air plane splint are obvious, particularly in the aged or the obese. These interfere with street clothing and frequently cause the person to be kept at home continuously. The author has used a modified treatment of these fractures for the past several years with great success. In fractures of the shaft of the humerus, of the surgical neck at times, excluding supracondylar fractures, he applies a heavy cast from the axilla to the wrist with the elbow at right angle. A ring of wire is placed near the thumb end of the cast so that a sling may be placed around the patient's neck. The weight of the cast, as a rule, is sufficient to cause the humerus to be pulled into a straight line when the patient is up. Usually in severe displacement the patient is first placed in bed with unbalanced traction until he is over shock, after which the cast is applied as described. The cast can be removed in three weeks and exercises begun very gradually.

The author has treated 108 such cases of fractures of the shaft of the humerus with excellent results. Good union and function, 85; poor position, good function, 6; poor function, 3; non-union, 1; delayed union, 4; result not ascertainable, 9.

Conclusions: The hanging cast is reasonable since the humerus when unsupported hangs vertically; the fragments will align themselves with slight traction. The hanging cast reduces lateral motion, and when such does take place both fragments move through the same arc. This method is far less cumbersome and uncomfortable and fatiguing than abduction methods.

"Spondylolisthesis." Harold H. Hitchcock, Jr. Bone & Joint Surg. Jan. 1940, Vol. XXII, No. 1.

"The term 'spondylolisthesis' is now almost universally limited in its use to describe a forward displacement of the vertebral column consequent to a defect or solution of continuity in the interarticular portion of the neural arch of a vertebra."

The author has done considerable research relative to the developmental aspect of spondylolisthesis and presents x-rays of very young children showing a gradual increase in the spondylolisthesis over a period of time. He describes the gradual destruction of thinning of the related intervertebral disc and degeneration of this disc in the gradual production of a spondylolisthesis. This is to be regarded as important both in the development of the condition and in the development of an osseous barrier to hinder further progression of the slipping.

After rather complete embryological study of the development of the vertebral column and possible development of the spondylolisthesis the author feels that a possible cause of spondylolisthesis is that of trauma during delivery or shortly afterward which may bring about this defect. The trauma applied would be that of forced flexion of the lower lumbar spine. At this time it is possible to assume that there is a fracture of the lamina with consequent failure of complete healing with weakness of the neural arch which later in life due to trauma or strain on the vertebral column may result in gradual development of spondylolisthesis.

The abstractors should like to announce that a small volume has been prepared by the Department of Orthopedic Surgery of the University of Oklahoma School of Medicine which contains most of the publications of the members of that Department for the years 1938-39. Twenty articles appear in this book which has been distributed to all the libraries of the medical schools throughout the United States.

These abstracts have been prepared by Dr. Howard B. Shorbe of the McBride Clinic.

UROLOGY

Edited by D. W. Branham, M. D.
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"The Fallacy of the Treatment of Renal Calculi By Drugs." H. C. Bumpus, Jr., Pasadena, California. Transactions of the Western Branch Urological Associations, 1939.

The idea that other than surgical means might be available for the removal of stones in the kidney, has always been the fond hope of the afflicted.

Dr. Bumpus in discussing the problem reviews the various theories thought to be etiologically responsible for their formation. Basically he believes the formation of stones in the upper urinary tract is a deficiency disease. What the exact mechanism for this deposition of urinary salts is yet an unsolved problem.

He states that the most plausible method of decreasing the size of a stone in the urinary tract would be to increase the acidity in the urine with which the stone is bathed. Most urinary stones are salts of weak acids, with the exception of uric acid stones. Increasing the acidity of the urine would lead to an increase in the solubility of these salts. However, he believes that while theoretically this is possible, practically it cannot be accomplished for various reasons.

First; the presence of calcium oxalate, this common constituent of many stones is not greatly affected by the acidities encountered in urine. Second; the acidity of human urine cannot be increased beyond a pH of 4.4 without causing uric acid crystals to form. Third; to have a kidney capable of excreting a urine of such acidity, it must be close to normal functioning ability, and most kidneys that have stones are not normal functioning organs. Fourth; the presence of urea splitting organism such as the Bacillus proteus, offers an almost unsurmountable obstacle to acidification.

Further he reasons, the body temperature 98.6 is not particularly stimulating to such a process as dissolving a hard calculus in weak acid. Last, he invites any one who feels that urinary acidification is a practical method of dissolving a stone, to attempt the procedure by placing a stone in a test tube filled with the

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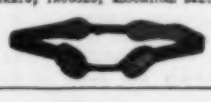
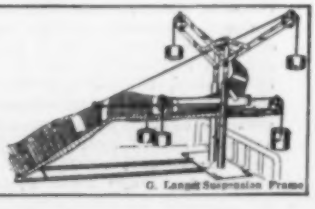
WE ALSO MANUFACTURE
BRACES, SPLINTS, FRACTURE FRAMES, FOOT ARCHES, SHOE EXTENSIONS, CELLULOID BODY JACKETS, TRUSSES, ABDOMINAL BELTS.



G. Lange Suspension Frame

most acid urine which can be produced, sealing the top and wait for solution to occur. The stability of the calculi so treated will convince the most enthusiastic believer in the impossibility of dissolving stones while in the body.

Comment: Despite the many reports in the literature of the efficiency of acidification in preventing recurrence and growth of renal calculi, I have never been convinced as to its value. The majority of patients are unable to restrict their diet for any length of time in order to keep the urine properly acidified. In addition, the reasons advanced by Dr. Bumpus certainly place this method of treatment for urinary calculi into a place of impractical and doubtful value.

"Granular Urethritis in Women." Harry M. Spence. Dallas, Texas. Transactions of the South Central Section of the American Urological Association, 1939.

The author used as a basis for discussion of this most prevalent ailment, 118 cases of granular urethritis in the adult female, and fifty cases found in female children.

Signs and symptoms referable to bladder function, namely; frequency, urgency and dysuria are the most dominant clinical findings. In ten per cent of cases was gross hematuria present.

The foroblique system of cystoscope has been found superior to the Brown-Burger instrument for the exact diagnosis of the condition. Urethral dilation and urethral fulguration with the high frequency apparatus proved to be the most successful method of treatment. They stress that if fulguration is performed, it be extremely light in character and confined only to the mucosa. A general anesthetic should be administered for the procedure.

Of particular interest in those cases found in children is the unusual number who complained of bed wetting. Fulguration of this lesion, where posterior urethritis was the sole etiologic agent, proved satisfactory in correcting this habit.

INTERNAL MEDICINE

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Bright's Disease. A Review of Recent Literature. William S. McCann, M.D., Rochester, N. Y. (Archives of Internal Medicine, March 1940, Volume 65, Number 3).

This is another review of the work reported in connection with Bright's disease. It appears that those interested in the pathological physiology of the kidney have concentrated their efforts on the study of the question of the renal factor in hypertension.

Several authors have engaged themselves in the study of renin, its extraction and purification. Highly purified preparations of renin have been made by some and believed to be a protein. Some conflicting conclusions have been reached, but many factors, such as methods of preparations, have yet to be standardized. The effect of renin on the intrinsic circulation of the kidney itself has been studied by Merrill, Williams and Harrison. They believe that renin causes a constriction of the efferent arterioles of the glomerulus, and that probably tyramine constricts the afferent arterioles.

Other interesting studies include the effect of age on the sensitivity to renin by Grossman and Williams, and the influence of various ductless glands on renin by Fasciolo, Houssay and Taquini. Blalock and Levy and others have done interesting work in connection with the ligation of ureters and the consequent physiological effect of hydronephrosis. Yuile and Knutti report experiments on the use of acacia which should further discourage those who "would rashly use this substance in the management of the edema of nephrosis." Their observations appear important since they indicate that the influence of acacia may actually interfere with the regeneration of plasma protein.

Further Studies of the Intracutaneous Method of Typhoid Vaccination. By Louis Tuft, M.D., Temple University School of Medicine, Philadelphia, Pa. (The American Journal of the Medical Sciences, January 1940, Vol. 199, No. 1).

In this the author reports in essence the following: Further studies of intracutaneous typhoid vaccination confirmed the author's original observations as to the efficacy of this method, both from an immunologic standpoint as well as in the marked reduction of complete elimination of annoying reactions. In addition, evidence of satisfactory increase of the protective power of the blood and of stimulation of the somatic or O agglutinins was provided.

On the basis of these results, it is believed that the intracutaneous injection of 0.1 cc., 0.15 cc. and 0.2 cc. of the ordinary typhoid vaccine is the most satisfactory of any of the methods for typhoid immunization and should be more widely used. A single dose of 0.1 cc. seems adequate for immunization of previously vaccinated persons.

Heart Pain Relieved With Oxygen

Breathing a high concentration of oxygen will ease the pain associated with a blocked heart artery (coronary thrombosis) and with angina pectoris (chest pang), Edward W. Boland, M.D., Los Angeles, states in *The Journal of the American Medical Association.*

He says that this action of oxygen is not generally recognized, although it is well known that the functions of the heart and respiratory systems are supported by it. Oxygen, he continues, will often relieve pain not alleviated by large doses of pain-killing drugs.

Relief of heart pain in five cases reported by him by breathing high concentrations of oxygen, Dr. Boland believes, lends support to the ischemic theory (deficiency of blood in a part because of contracting blood vessels) of its mechanism. "According to the ischemic theory," he explains, "impaired circulation within the muscles of the heart results in deficient oxygen in the heart muscles and the accumulation of metabolites (products of metabolism). These substances, particularly lactic acid, chemically irritate the perceptors (sensation-receiving parts) of the sympathic afferent (central) nerves with the reflex production of pain.

"The prompt relief of pain in each case of coronary thrombosis reported was dramatic. Relief was obtained within ten minutes after oxygen treatment was instituted. Invariably the apprension, restlessness and labored breathing and the symptoms of mild shock were quickly controlled. The administration of 100 per cent oxygen is advocated when the pain is intense or is resistant to opiates."

Vitamins Furnished in Breast Milk

"Breast milk can furnish to the baby only such vitamins as are taken in the mother's food," *The Journal of the American Medical Association* points out in answer to an inquiry as to whether or not such milk contains sufficient vitamins for the infant, and if so for how long a time.

"It is therefore obvious that, unless the mother has a diet rich in vitamines C and D, she will not furnish an adequate supply of these vitamins to the baby. It is for this reason that it is strongly advisable to begin both orange juice and some form of vitamin D early in infancy. As it takes some time for either a vitamin C deficiency—that is, scurvy—or a vitamin D deficiency—that is, rickets—to develop it is impossible to say for how long a time the mother's milk alone would be adequate to protect a newborn baby. The only safe procedure is to take no chance and to supply these vitamins from earliest infancy on."